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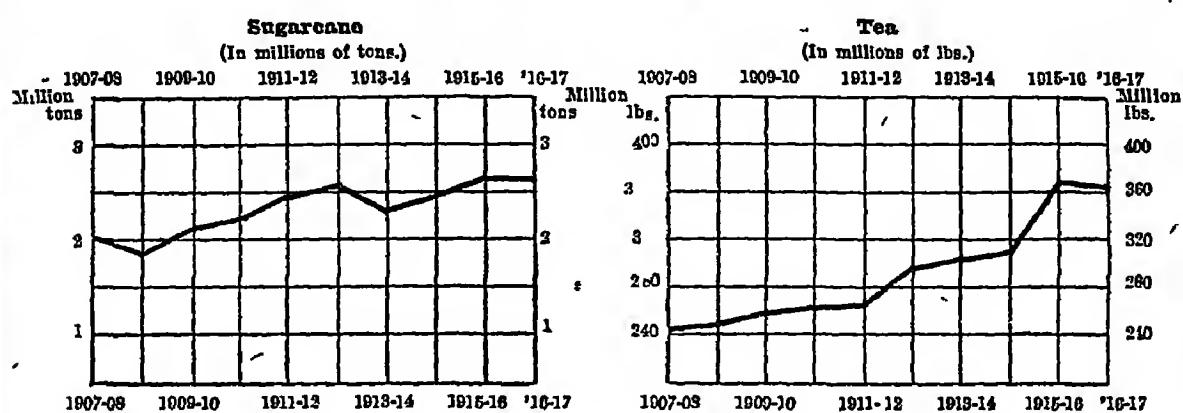
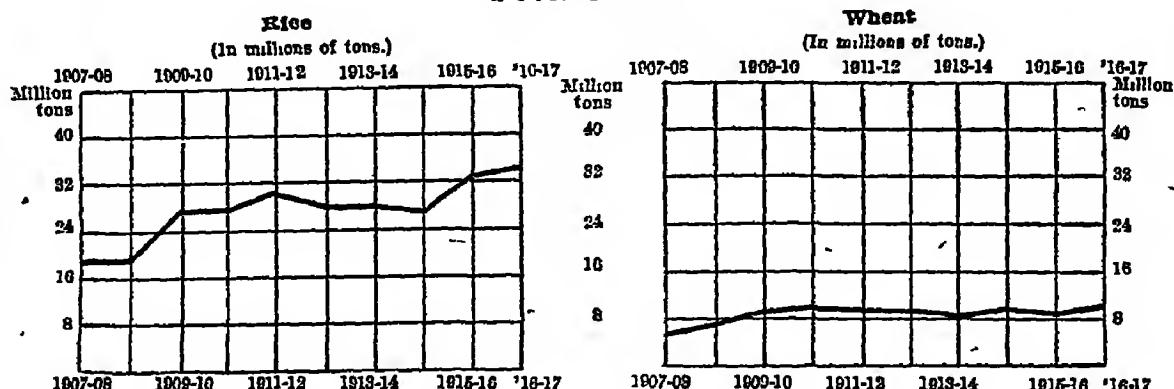
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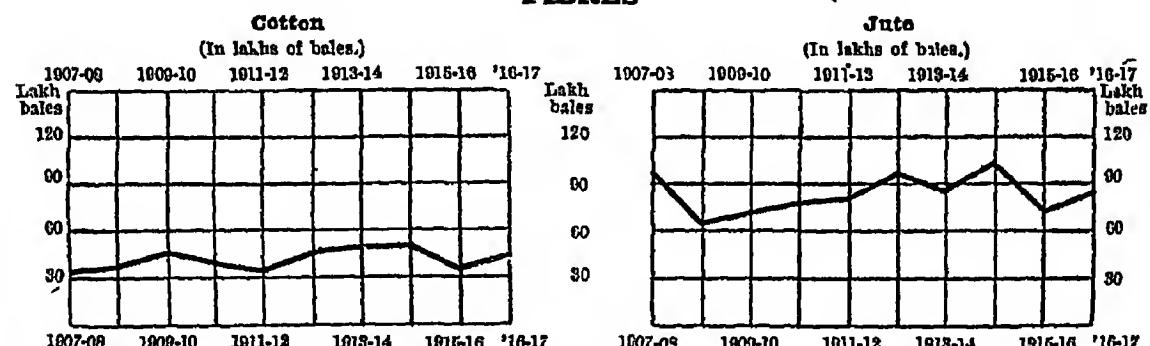
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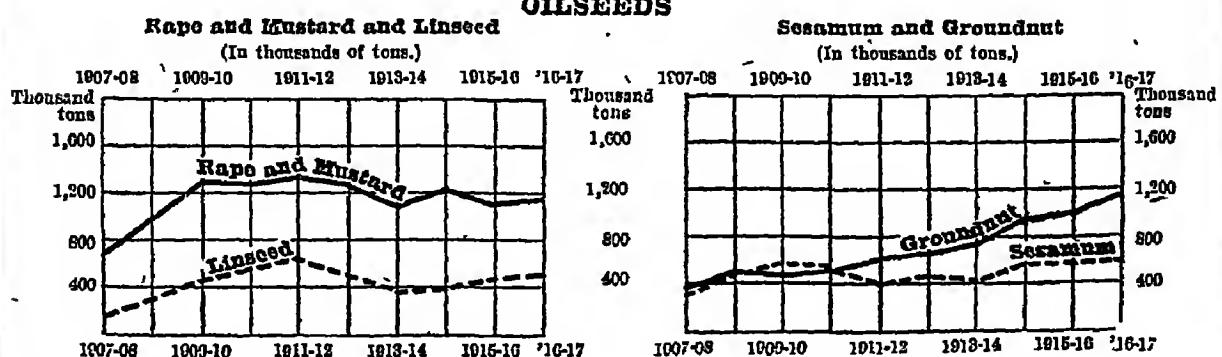
FOOD CROPS



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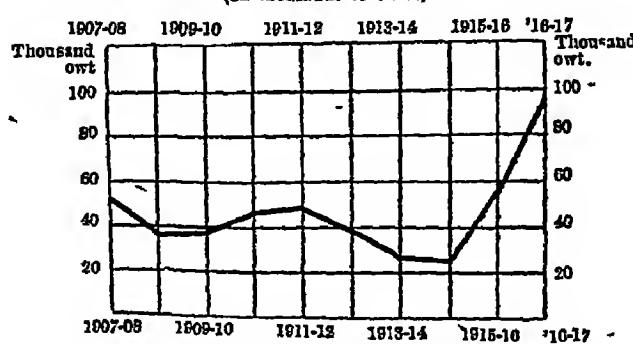


OILSEEDS



INDIGO (DYE)

(In thousands of cwts.)



NINETEENTH ISSUE

DEPARTMENT OF STATISTICS, INDIA

**ESTIMATES
OF
AREA AND YIELD
OF
Principal Crops in India**

1916-17

Published by order of the Governor-General in Council



**CALCUTTA
SUPERINTENDENT GOVERNMENT PRINTING, INDIA
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CONTENTS

Introductory Note

	<small>PAGES.</small>
Source and scope of the estimates	i
Leading features of the season in respect of each crop	1—4
Charts illustrating the increase or decrease in yield of each crop in the ten years, 1907-08 to 1916-17	<i>frontispiece</i>

Tables

No.

1. Abstract table—Area and Yield of each crop	6
2. Yield per acre of each crop in each province	7—8
3. Standard or Normal Yields per acre of those crops for which forecasts are prepared	8
4. Detailed table—Area and Yield of Rice in each province	9
5. Ditto ditto Wheat	10
6. Ditto ditto Sugarcane	11
7. Ditto ditto Tea	<i>ib.</i>
8. Ditto ditto Cotton	12
9. Ditto ditto Jute	13
10. Ditto ditto Linseed	<i>ib.</i>
11. Ditto ditto Rape and Mustard	14
12. Ditto ditto Sesamum (til or jinjili)	15
13. Ditto ditto Groundnut	16
14. Ditto ditto Indigo	<i>ib.</i>
15. Supplementary table—Area and Yield of Barley, Jawar, Bajra, Maize, and Gram in each province	17—19
16. Normal and actual Rainfall in each province	20
Appendix I.—Method of framing estimates of crops	21—22
Appendix II.—Methods of collecting the statistics province by province	23—26
Appendix III.—Dates prescribed for the issue of the all-India forecasts	27
Index	28

Estimates of Area and Yield of Principal Crops in India, 1916-17

INTRODUCTORY NOTE.

The present issue is the nineteenth of the series and relates to the area and yield of the principal crops for which estimates were made in 1916-17. It is the fourth of the new series that was commenced in 1913-14.

The periodical estimates or forecasts of certain crops are compiled from local returns and issued by this Department. The general practice is to issue a preliminary forecast, a second estimate, and a third or final estimate—fuller and more precise in data than the two former forecasts. The dates prescribed for the issue of the forecasts by this Department are given in Appendix III. The figures in the tables in this volume are those given in the final forecasts. They show for the last ten years the area sown with, and the estimated yield of, rice, wheat, sugarcane, tea,* cotton, jute, linseed, rape and mustard, sesamum, groundnut, and indigo. The rates of yield per acre of these crops in each of the last five years are shown in table No. 2, and the normal yields per acre in table No. 3.

Source and scope of the estimates.

The estimates for these crops did not, especially in the earlier years of gradual development in India, relate to all the producing areas, but only to those tracts where the respective crops were grown on an extensive and commercial scale. Tracts of minor importance have been added gradually, as will be seen from the tables and the footnotes thereto. It should, therefore, be remembered that, owing to this gradual development, the estimates in the forecasts for earlier years are not altogether strictly comparable with those for later years, as is the case with the agricultural statistics of British India, published in Volume I of Agricultural Statistics of India. The increase in this respect, however, between the year under report as against the three previous years is so small as to be negligible and to afford a comparison of the estimates of the year (1916-17) with those of the three preceding years. At present the estimates for cotton, wheat, and jute relate to all the tracts in India where these crops are grown to any extent, excluding certain unimportant outlying tracts, such as Baluchistan, Kashmir, Nepal, and Sikkim. For other crops, however, the estimates, though relating to all the British provinces where they are grown to any considerable extent (excepting Burma in the case of sesamum), still exclude the Native States, except those in the Bombay Presidency and the States of Hyderabad and Baroda in certain cases. Further details regarding the reporting tracts are given in the paragraphs below, in footnotes to the tables, and in Appendix II on pages 23-26. It may be noted that, owing chiefly to causes already mentioned, the figures given in this volume do not agree in some instances with those in the Agricultural Statistics of India.

Estimates, so far as available, for certain other staple crops, namely, barley, jawar, bajra, maize, and gram, have been shown in a supplementary table (No. 15), the figures being taken from the provincial Season and Crop Reports or specially obtained from local authorities.

The monsoon of 1916 was particularly good; it arrived early and continued late, the distribution of rain being remarkably uniform. Thus there was ample moisture in the land for the maturing of the autumn crops and for providing a seed-bed for those crops which are harvested in the spring. The winter rains, notwithstanding the beneficial showers received in places during February, were much below normal. The crops were generally better than those of 1915-16, except in regard to sugarcane and tea, and the outturn was above the average of the pre-war quinquennial period, except in regard to cotton, jute, and rape and mustard. Conditions with regard to each crop are stated in the following paragraphs. Statistics of normal and actual rainfall are given in table No. 16.

Leading features of the season.

* For the tea crop no forecast is prepared; the figures are taken from the Annual Report on the Production of Tea in India published by this Department.

Rice.

Rice is generally regarded as a winter crop, being mainly harvested in December and January. It is sown in the months from May to August.* There are two other varieties of comparatively small importance, namely, autumn rice and summer rice. Autumn rice is sown in May and June and harvested in September, and summer rice is sown in January and February and harvested in May and June. The provinces to which the estimates for rice now relate are Bengal, Bihar and Orissa, Madras, Burma, the United Provinces, the Central Provinces and Berar, Assam, Bombay, Sind, and Coorg. These tracts comprise 99 per cent of the total rice area of British India. The only Native States for which estimates for rice are prepared are those in the Bombay Presidency. The total area under rice in all these tracts in 1916-17 was reported as 79,700,000 acres as compared with 78,165,000 acres in the preceding year. Heavy rain and floods damaged the crop in Assam, Bombay, and the Central Provinces, and the autumn crop in Bengal and Bihar and Orissa, otherwise the season was, on the whole, favourable. The total estimated yield was 34,079,000 tons as against 32,831,000 tons in 1915-16. To this figure should be added some 325,000 tons in respect of other British provinces† (containing about 757,000 acres under rice), for which no forecasts are made. It may be noted that the estimates for 1916-17 of both area and yield are the highest on record.

Wheat.

Wheat, which is a *rabi* (spring) crop in India, is sown from October to December and is harvested from March to May. The provinces and states to which the estimates for this crop relate are the Punjab, the North-West Frontier Province, the United Provinces, Ajmer-Merwara, Delhi, the Central Provinces and Berar, Bombay, Sind, Bengal, Bihar and Orissa, Central India, Rajputana, Hyderabad, and Mysore. These tracts contain practically the whole of the area under wheat in India. The total area under wheat in 1916-17 was reported to be 32,940,000 acres, which exceeds the area of the preceding year by 2,620,000 acres or 9 per cent. The condition of the crop was good except in parts of the unirrigated areas in the Punjab and Delhi. The unsettled weather in April and May slightly affected the quality of the crop and caused some discolouration of the grain in Northern and Central India. The total estimated yield was 10,158,000 tons, which is above the yield of 1915-16 by 1,506,000 tons or 17 per cent. As in the case of rice, the figures for 1916-17 for wheat also are the highest on record. An addition of some 136,000 tons should be made to the estimated yield in respect of other tracts‡ (containing about 442,000 acres under wheat), for which no reports are made.

Sugarcane.

The sugarcane crop is planted from February to May and is harvested from November to January. The provinces to which the reports on this crop relate are the United Provinces, Bihar and Orissa, Bengal, Assam, the Punjab, the North-West Frontier Province, Bombay (including Sind), Madras, and the Central Provinces and Berar. These tracts contain 99 per cent of the total area under sugarcane in British India. Reports are also received from the Native States in the Bombay Presidency (including the Baroda State). No report is received from any other Native State. The total reported area (2,414,000 acres) under sugarcane in 1916-17 was 1 per cent above that of the preceding year. The crop was good except in certain parts of the United Provinces and Bengal, where it was damaged to some extent by excessive rainfall and floods. The estimated yield (2,626,000 tons) was slightly below the final figure (2,634,000 tons) of the preceding year. To this figure should be added approximately 25,000 tons in respect of other British provinces§, for which no separate estimates are made.

Tea.

The provinces where tea is grown are Assam, Bengal, Madras, the United Provinces, the Punjab, Bihar and Orissa, Burma, and the State of Travancore. The total area under tea in 1916 was reported to be 651,200 acres, which is 2.5 per cent greater than that in the preceding year. Conditions at the beginning of the season were somewhat disappointing, and it was not until the season had considerably advanced that the weather became favourable for its growth. Exceptionally good yields were obtained from all districts, except Cachar and

* Rice is sown to a very large extent in Madras (especially in the south) from September to December and again to a fair extent in February and March.

† Panjab, North-West Frontier Province, Delhi, and Ajmer.

‡ Burma, Madras, and the Kashmir State.

§ Burma, Delhi, and Ajmer.

Sylhet, during August and September, but from then onwards the outturn steadily decreased. In parts of Cachar heavy floods occurred during October, and caused a great deal of damage. The total production of manufactured tea (both black and green) was reported to be 368,528,000 lbs in 1916 as against 371,837,000 lbs in the preceding year.

The total reported area under cotton was 21,212,000 acres in 1916-17 as cotton, against 17,746,000 acres in 1915-16. The area increased almost everywhere, owing mainly to the stimulus of high prices obtained in the preceding year. The crop was, however, adversely affected by the heavy and continuous rain of September and October, particularly in the Central Provinces, the United Provinces, Sind, and Bengal. The total estimated outturn was 4,273,000 bales of 400 lbs each, which is 535,000 bales or 14 per cent larger than the final figure of 1915-16. The marginal statement compares the estimates of yield for the last three years with the sum of net exports and internal consumption (in thousands of bales). It may be noted, however, that while the statistics of exports and consumption take into account stocks carried from year to year, the estimates of yield refer to the years specified.

There are, it may be remembered, two crops of cotton grown in India, namely, the early and the late. Early cotton grows principally in northern and central India, and late cotton largely in southern and western India. Taking both the crops together, the sowing season extends from March to August and the harvesting season from October to April. In parts of Southern India sowings continue till October and harvesting till July. The estimates given above relate to all the cotton-growing provinces and States in India.

Jute is an autumn crop, being sown from March to May and harvested in Juto. August and September. The provinces where it is grown are Bengal including the Cooch Bihar State, Bihar and Orissa, and Assam. It is also grown to a small extent in the Nepal State, but no reliable information is available for that State. The total reported area under jute in 1916 (2,702,700 acres) was above that of the preceding year by 14 per cent, and the estimated yield (8,305,600 bales of 400 lbs each) rose by 13 per cent. The crop was adversely affected by excessive rain in certain districts of Bihar and Orissa. The area and yield of jute in 1917 are estimated to be 2,729,700 acres and 8,839,900 bales respectively. The sum of exports and internal consumption, both in and outside the mills, is compared, at the bottom of table No. 9, with the estimated yield for the last ten years.

Linseed is a rabi (spring) crop, being sown from August to October Linseed. and harvested from January to April. The provinces to which the estimates for linseed relate are the United Provinces, the Central Provinces and Berar, Bengal, Bihar and Orissa, the Punjab, and Bombay. These tracts comprise 98.9 per cent of the total area under linseed in British India. Reports are also made by the State of Hyderabad and by the States in the Bombay Presidency. No report is received from any other Native State. The total area under linseed reported by all the reporting tracts in 1916-17 was 3,532,000 acres, which is 6 per cent above the final figure of the preceding year. The condition of the crop was, on the whole, good, except in Bengal, where the crop was at first adversely affected by heavy rainfall and later by drought. The total estimated yield (520,000 tons) was larger than that of the preceding year by 9 per cent. To this figure should be added some 5,000 tons for other British provinces,* for which no reports are made.

Rape and mustard are also rabi (spring) oilseeds, being sown from August Rape and mustard. to October and harvested from January to April. The provinces from which reports are received are the Punjab, Bengal, Bihar and Orissa, Assam, the United Provinces, the North-West Frontier Province, Bombay, and Sind. These tracts contain 99.2 per cent of the total area under rape and mustard in British

* Assam, Delhi, Ajmer, Madras, and Burma.

India. Reports are also received from the States of Hyderabad and Baroda and from the States in the Bombay Presidency. No report is received from any other Native State. The total area under rape and mustard reported by all the reporting tracts in 1916-17 was 6,440,000 acres, as against 6,437,000 acres in the preceding year. The crop was generally good except in Assam where it suffered through drought. The total estimated yield (1,181,000 tons) was 7 per cent above the final figure of the preceding year. To this figure should be added some 9,000 tons in respect of other British provinces,* for which no reports are made.

Sesamum.

Sesamum is mainly a *kharif* (autumn) crop, being generally sown from May to July and harvested from October to December; but in parts of Southern India sowing continues till September or October and harvesting till March or April. A *rabi* or summer variety is also grown in certain tracts; this is sown in January and February and is harvested in May to July. The provinces to which the estimates for sesamum relate are the Central Provinces and Berar, Bombay, Sind, Madras, the United Provinces, Bengal, Bihar and Orissa, the Punjab, and Ajmer-Merwara. These tracts contain about 78 per cent of the total area under sesamum in British India. Reports are also received from the Native States of Hyderabad and Baroda and those in the Bombay Presidency. No report is received from any other Native State or from Burma. The total reported area under sesamum in 1916-17 was 5,015,000 acres against 5,108,000 acres in the preceding year. Heavy and continuous rain in September and October adversely affected the crop in almost all the important sesamum-growing provinces, particularly in the Central Provinces and Berar, Bengal, and in certain parts of the United Provinces and the Bombay Presidency. The early crop of Bengal suffered through a deficiency of rainfall at the beginning of the season. The total estimated yield was 493,000 tons as against 482,000 tons in 1915-16, an increase of 2 per cent. An addition of approximately 23 per cent or 113,000 tons should be made to this figure in respect of other British provinces† (containing an aggregate area of about 1,150,000 acres under sesamum), for which no reports are made.

Groundnut.

The groundnut crop is sown from May to August and is harvested from November to January. The provinces to which the estimates for this crop relate are Madras, Bombay (including Native States), and Burma, these being the provinces where groundnut is grown to a considerable extent. The total area under groundnut in these three provinces in 1916-17 was reported as 2,317,000 acres, which is 38 per cent more than the figure of the preceding year, the estimated yield (1,147,000 tons) being 8 per cent in excess of last year's. The crop was damaged by the abnormally heavy rains, especially in the Carnatic (Madras) and in some places of the Bombay Deccan.

Indigo.

The indigo crop is sown from February to July and is harvested from August to November. The provinces to which the estimates for indigo relate are Bihar and Orissa, Bengal, the United Provinces, the Punjab, Madras, Bombay, and Sind. These tracts contain practically the whole area under indigo in British India. No report is received from any Native State, except the State of Khairpur in Sind. The total reported area (756,400 acres) in 1916-17 was 11.4 per cent greater than that of the preceding year. The season was not, on the whole, favourable for the crop, except in the Punjab, Bombay, and Sind. Heavy rainfall and floods adversely affected the crop in the United Provinces and in parts of Bihar and Orissa and Madras. The total estimated yield of dye was 95,500 cwts, which was greater than the figure of the preceding year by 73 per cent.

G. FINDLAY SHIRRAS,

Director of Statistics.

DEPARTMENT OF STATISTICS, INDIA,

Calcutta, September 25, 1917.

* Central Provinces and Berar, Madras, Burma, Delhi, and Ajmer.
† Burma, Assam, North-West Frontier Province, and Coorg.

TABLES

Note.—The rates of yield per acre of the crops tabulated in tables Nos. 4 to 14 are given in table No. 2.

ABSTRACT TABLE

6

No. 1.—ABSTRACT TABLE—AREA AND YIELD OF EACH CROP

Area (acres)

Crops	Average 1893-96 to 1899-1000	Average 1900-01 to 1904-05	Average 1905-06 to 1909-10	Average 1910-11 to 1914-15	1912-13	1913-14	1914-15	1915-16	1916-17
Rice . . .	50,855,000	50,067,000	54,942,000	69,318,000	71,623,000	75,425,000	76,625,000	78,165,000	79,700,000
Wheat . . .	22,649,000	25,518,000	26,565,000	30,340,000	30,043,000	28,475,000	32,475,000	30,820,000	32,940,000
Sugarcane . . .	(a)	2,259,000	2,281,000	2,876,000	2,526,700	2,645,500	2,311,000	2,391,000	2,414,000
Tea . . .	467,000	525,000	540,000	593,000	691,600	610,100	624,500	635,200	651,200
Cotton . . .	13,866,000	16,652,000	21,146,000	23,171,000	22,028,000	25,023,000	24,595,000	17,746,000	21,212,000
Jute . . .	2,035,000	2,335,000	3,061,000	3,057,000	2,970,500	2,911,000	3,358,500	2,375,900	2,702,700
Linseed . . .	2,869,000	3,517,000	3,061,000	3,852,000	4,124,000	3,081,000	3,925,000	3,833,000	3,532,000
Rape and Mustard	4,541,000	5,598,000	6,056,000	6,407,000	5,955,800	6,266,400	6,507,000	6,437,000	6,440,000
Sesamum . . .	4,019,000	4,903,000	4,915,000	5,129,000	4,989,500	5,076,000	5,505,000	5,108,000	5,015,000
Groundnut . . .	(a)	431,000	827,000	1,610,000	1,366,400	2,103,000	2,413,000	1,673,000	2,817,000
Indigo . . .	1,250,000	722,000	331,000	216,000	216,600	172,600	148,400	353,100	756,400

Yield

Crops	Average 1893-96 to 1899-1900	Average 1900-01 to 1904-05	Average 1905-06 to 1909-10	Average 1910-11 to 1914-15	1912-13	1913-14	1914-15	1915-16	1916-17
Rice . . . tons	21,466,000	21,550,000	21,912,000	25,317,000	26,495,000	28,790,000	27,242,000	32,831,000	34,079,000
Wheat . . . "	6,029,000	7,676,000	8,092,000	9,657,000	9,853,000	8,853,000	10,087,000	8,652,000	10,159,000
Sugarcane . . . "	(a)	2,019,000	1,996,000	2,401,000	2,583,600	2,291,500	2,462,000	2,634,000	2,626,000
Tea . . . lbs.	158,875,000	201,389,000	212,886,000	239,991,000	297,878,100	307,249,600	312,976,200	371,636,700	368,527,600
Cotton . . . bales	2,303,000	3,203,000	3,976,000	4,405,000	4,610,000	5,066,000	5,209,000	3,738,000	4,273,000
Jute . . . "	5,771,000	7,036,000	8,136,000	9,069,000	9,942,600	8,893,900	10,443,900	7,940,900	8,805,600
Linseed . . . tons	352,000	416,000	383,000	503,000	512,100	386,200	387,000	476,000	520,000
Rape and Mustard . . . "	915,000	1,011,000	992,000	1,225,000	1,211,200	1,087,500	1,210,200	1,102,100	1,181,200
Sesamum . . . "	348,000	465,000	418,000	468,000	474,000	403,500	551,000	482,000	493,000
Groundnut . . . "	(a)	(a)	355,000	625,000	669,920	748,500	917,000	1,058,000	1,147,000
Indigo . . . cwtis	156,000	100,000	49,000	87,000	39,100	26,600	25,200	55,100	95,500

Note.—Figures for 1916-17 are subject to revision

(a) Not available

No. 2.—YIELD PER ACRE OF CROPS (tabulated in tables 4 to 14) IN EACH PROVINCE IN EACH OF THE LAST FIVE YEARS

Province	RICE (CLEANED)					WHEAT					SUGARCANE (RAW SUGAR OR GUR)					TEA											
	1912-13		1913-14		1914-15	1915-16		1916-17	1912-13		1913-14		1914-15	1915-16		1916-17	1912-13		1913-14		1914-15	1915-16		1916-17			
	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs		
United Provinces	657	407	734	804	837	801	777	833	917	1,014	2,045	1,662	2,107	2,270	2,031	911	823	207	308	264							
Madras	708	878	875	909	1,000	...	...	...	...	...	4,038	4,010	4,783	4,386	4,704	310	270	320	412	370						
Bihar and Orissa	826	1,121	826	1,200	1,212	933	973	938	970	1,024	2,464	2,461	2,833	2,223	2,460	717	142	128	139	183							
Bombay	1,131	1,000	1,180	1,064	1,008	701	539	602	580	581	5,098	5,589	5,073	6,149	6,332	...	...	...	...	...		
Sind	691	910	814	852	800	938	901	867	808	845	2,028	2,613	2,163	2,482	2,812	460	614	473	555	550							
Bengal	907	837	702	686	851	782	703	635	800	805	1,674	1,681	1,805	1,775	1,820	208	220	198	199	155							
Punjab	...	...	...	...	...	...	710	745	730	542	913	1,074	1,081	1,051	2,773	...	...	...	...	...		
Central Provinces and Berar.	...	371	720	749	658	636	455	514	603	656	...	2,383	2,501	2,773	2,727	...	...	...	...	...		
Burma	1,012	800	821	904	941	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	60	51	52	62	52	
Assam	1,021	782	780	744	738	...	407	655	627	635	601	2,500	2,480	2,620	2,386	2,613	...	...	...	...	...	
North-West Frontier Province	...	...	...	...	...	...	407	655	627	635	601	2,500	2,480	2,620	2,386	2,613	...	...	...	...	...	
Ajmer-Merwara	...	...	...	...	...	...	...	800	660	973	860	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Delhi	...	...	...	...	...	...	...	...	...	680	684	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Coorg	1,430	950	1,406	1,418	1,410	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Central India	...	...	...	...	...	...	731	412	404	400	573	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rajputana	...	...	...	...	...	...	839	430	549	400	518	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hyderabad (b)	...	...	...	...	...	...	130	137	127	101	210	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mysore	...	...	...	...	...	...	450	461	303	329	373	...	...	...	...	...	...	...	...	...	471	405	418	408	431	
Travancore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
AVERAGE	601	856	700	911	928	735	657	803	630	601	2,290	2,010	2,390	2,408	2,457	503	504	501	555	546							
Province	LINSEED					RAPE AND MUSTARD					SESAMUM					GROUNDNUT (NUTS IN SHELL)											
	1912-13	1913-14	1914-15	1915-16	1916-17	1912-13	1913-14	1914-15	1915-16	1916-17	1912-13	1913-14	1914-15	1915-16	1916-17	1912-13	1913-14	1914-15	1915-16	1916-17	1912-13	1913-14	1914-15	1915-16	1916-17		
	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs	lbs		
United Provinces	431	801	800	418	457	620	340	605	420	410	247	109	160	203	180	...	...	...	...	...	...	...	...	...	...	...
Madras	...	...	...	...	...	...	...	...	...	...	178	200	200	101	215	527	574	690	1,288	1,003						
Bihar and Orissa	431	614	508	430	403	444	404	322	423	604	210	320	283	313	864	...	...	...	...	...	...	...	...	...	...	...
Bombay	227	181	302	318	303	593	571	207	378	592	272	280	348	268	305	2,210	2,107	2,343	2,602	2,063							
Sind	236	218	251	189	337	214	263	197	182	224	
Bengal	410	393	320	317	357	410	454	303	502	635	207	270	250	241	239	...	...	...	...	...	...	...	...	...	...	...
Punjab	...	160	220	210	204	305	360	374	290	383	220	246	243	205	272	...	...	...	...	...	...	...	...	...	...	...
Central Provinces and Berar.	210	160	148	177	189	...	...	...	...	...	175	180	209	226	165	...	...	...	...	...	1,003	799	738	902	600	
Burma	443	450	427	414	390	350	320	
Assam	213	252	314	387	220	10	64	17	172	
North-West Frontier Province	
Ajmer-Merwara (a)	
Delhi	
Coorg	
Central India	
Rajputana	
Hyderabad (b)	70	90	88	93	112	40	40	64	37	75	112	92	101	90	122	
Mysore	
Travancore	
AVERAGE	204	285	267	320	330	407	389	410	381	411	213	178	222	211	220	1,099	700	870	1,417	1,100							

(a) The generally low output of sesamum in Ajmer-Merwara is due to the fact that the crop is grown on unirrigated land, which is not manured and on which no other valuable crop is expected to give a yield sufficiently remunerative.

(b) The question regarding the generally low output in Hyderabad is under investigation.

Note.—Figures for 1916-17 are subject to revision.

NO. 2.—YIELD PER ACRE OF CROPS (tabulated in tables 4 to 14) IN EACH PROVINCE IN EACH OF THE LAST FIVE YEARS—*contd.*

Province	COTTON (GINNED)						JUTE						INDIGO (DYE)						
	1912-13	1913-14	1914-15	1915-16	1916-17	1912-13	1913-14	1914-15	1915-16	1916-17	1912-13	1913-14	1914-15	1915-16	1916-17	1912-13	1913-14	1914-15	
United Provinces	148	122	125	120	104	...	...	...	...	...	15	14	14	10	10	15	14	14	10
Madras	78	45	40	43	66	...	...	...	...	...	27	23	21	20	16	...	...	...	...
Bihar and Orissa	83	93	91	90	93	1,003	757	740	1,298	990	18	12	16	18	15	...	...	...	...
Bombay	89	89	91	84	95	...	...	...	...	...	...	...	...	...	...	31	27	18	21
Sind	100	108	138	118	128	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Bengal	103	110	151	130	110	1,370	1,393	1,293	1,215	1,258	11	9	17	14	10	...	...	...	...
Punjab	95	110	105	86	114	...	...	...	...	...	18	17	18	14	10	...	...	...	...
Central Provinces and Berar	81	81	83	109	55	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Burma	70	71	63	58	81	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Assam	114	116	141	125	137	948	941	1,103	820	1,075	...	...	...	...	...	...	...	...	...
North-West Frontier Province	93	95	93	92	80	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Ajmer-Merwara	209	103	111	35	163	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Delhi	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Coorg	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Central India	63	77	77	86	88	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Rajputana	127	112	184	102	143	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Hyderabad (a)	42	41	41	61	62	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Mysore	40	47	51	61	51	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Travancore	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
AVERAGE	84	81	85	84	81	1,325	1,222	1,234	1,230	1,229	20	17	19	17	21	...	...	...	...

Note.—Figures for 1916-17 are subject to revision
(a) The question regarding the generally low output in Hyderabad is under investigation

NO. 3.—STANDARD OR NORMAL YIELDS PER ACRE OF THOSE CROPS FOR WHICH FORECASTS ARE PREPARED

Province	Rice (cleaned)	Wheat	Sugar-cane (qtr.)	Cotton (ginned)	Jute	Linseed	Rape and mustard	Sesamum	Ground-nut (nuts in shell)	Indigo (dye)
Bengal	1 (a) 987 (b) 823 (c) 1,111	1 864	1 2,921	1 155	1 1,271	1 494	1 494	1 350	1 ...	1 12
Bihar and Orissa	1 (a) 1,234 (b) 823 (c) 623	1 (d) 934 (e) 451 (f) 861	1 2,461	1 155	1 1,200	1 491	1 494	1 350	1 ...	1 20
Assam	1 (a) 1,008 (b) 672 (c) 1,008	1 ...	1 1,904	1 154	1 1,320	1 ...	1 504	1 ...	1 ...	1 ...
United Provinces	1 900	1 1,050	1 2,600	1 160	1 ...	1 500	1 600	1 280	1 ...	1 18
Madras	1 (h) 1,680 (i) 887	1 ...	1 5,010	1 (h) 87 (i) 65	1 ...	1 ...	1 ...	1 800	1 1,120	1 35
Bombay	1 1,230	1 575	1 6,950	1 100	1 ...	1 360	1 625	1 400	1 3,000	1 ...
Sind	1 1,180	1 1,340	1 4,233	1 (j) 350	1 ...	1 ...	1 602	1 394	1 ...	1 ...
Punjab	1 ...	1 725	1 1,686	1 118	1 ...	1 *	1 396	1 ...	1 ...	1 ...
Central Provinces and Berar	1 624	1 600	1 2,560	1 85	1 ...	1 226	1 ...	1 224	1 ...	1 ...
North-West Frontier Province	1 ...	1 633	1 2,430	1 160	1 ...	1 ...	1 418	1 ...	1 ...	1 ...
Burma	1 (g) 1,070	1 ...	1 ...	1 122	1 ...	1 ...	1 ...	1 ...	1 870	1 ...
Ajmer-Merwara	1 ...	1 *	1 ...	1 170	1 ...	1 ...	1 *	1 ...	1 ...	1 ...
Delhi	1 ...	1 *	1 ...	1 ...	1 ...	1 ...	1 ...	1 ...	1 ...	1 ...
Coorg	1 1,483	1 ...	1 ...	1 ...	1 ...	1 ...	1 ...	1 ...	1 ...	1 ...

* Not available
(a) Winter Rice
(b) Autumn Rice
(c) Summer Rice
(d) Bihar
(e) Chota Nagpur
(f) Orissa
(g) 997 lbs. for Upper Burma and 1,140 lbs. for Lower Burma

(h) Irrigated
(i) Unirrigated
(j) Subject to revision

No. 4.—AREA AND YIELD OF RICE IN EACH PROVINCE

Area (acres)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Bengal (a)	40,210,000	88,158,000	42,077,000	42,703,000	20,437,000	20,039,000	19,846,000	20,450,000	20,916,000	21,120,000
Bihar and Orissa	(c)	(c)	(c)	(c)	17,983,000	16,196,000	16,223,000	16,130,000	(i) 16,255,000	16,442,000
Madras (b)	7,215,000	7,961,000	7,075,000	7,787,000	10,286,000	10,944,000	10,678,000	10,876,000	11,223,000	11,377,000
Burma (e)	7,252,000	7,569,000	7,407,000	7,149,000	7,973,000	9,986,000	10,056,000	9,933,000	10,406,000	10,520,000
United Provinces	(d)	(d)	(d)	(d)	5,220,000	6,811,000	6,002,000	6,200,000	6,376,000	7,156,000
Central Provinces and Berar	(d)	(d)	(d)	(d)	(d)	(d)	4,986,000	5,083,000	5,097,000	5,086,000
Assam	(c)	(c)	(c)	(c)	4,015,000	4,272,000	3,752,000	4,045,000	4,280,000	4,265,000
Bombay (including Native States) (f)	(d)	(d)	(d)	(d)	(d)	1,024,000	2,028,000	2,050,000	2,336,000	2,480,000
Sind (including Native States) (g)	(d)	(d)	(d)	(d)	(d)	1,088,000	1,112,000	1,117,000	1,191,000	1,220,000
Coorg	81,000	80,000	81,000	82,000	82,000	83,000	82,000	81,000	82,000	81,000
TOTAL	54,758,000	63,188,000	58,200,000	58,111,000	61,808,000	71,623,000	75,425,000	70,025,000	78,165,000	79,700,000

Yield (tons)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Bengal (a)	13,326,000	14,181,000	21,780,000	21,848,000	8,035,000	8,356,000	7,412,000	8,411,000	8,276,000	8,028,000
Bihar and Orissa	(c)	(c)	(c)	(c)	8,906,000	5,969,000	8,120,000	5,947,000	(i) 8,771,000	8,809,000
Madras (b)	2,475,000	3,186,000	2,968,000	3,174,000	5,833,000	4,435,000	4,186,000	4,247,000	4,552,000	5,536,000
Burma (e)	3,157,000	3,233,000	3,209,000	2,876,000	3,325,000	4,501,000	4,037,000	3,675,000	4,200,000	4,417,000
United Provinces	(d)	(d)	(d)	(d)	1,770,000	1,008,000	1,204,000	2,032,000	2,289,000	2,675,000
Central Provinces and Berar	(d)	(d)	(d)	(d)	(d)	(d)	825,000	1,055,000	1,705,000	1,481,000
Assam	(c)	(c)	(c)	(c)	1,596,000	1,918,000	1,310,000	1,420,000	1,421,000	1,406,000
Bombay (including Native States) (f)	(d)	(d)	(d)	(d)	(d)	820,000	1,270,000	1,306,000	1,110,000	1,094,000
Sind (including Native States) (g)	(d)	(d)	(d)	(d)	(d)	405,000	322,000	406,000	451,000	490,000
Coorg	67,000	89,000	52,000	55,000	40,000	53,000	35,000	53,000	53,000	54,000
TOTAL	19,017,000	19,598,000	27,909,000	27,055,000	30,114,000	28,485,000	28,700,000	27,244,000	32,831,000	34,070,000

(a) Includes Bihar and Orissa and Assam down to 1910-11

(b) The estimates for years prior to 1911-12 are generally defective

(c) Included under Bengal

(d) Not available

(e) The figures down to 1911-12 relate only to the chief rice-growing districts in Lower Burma

(f) The estimates relate to all rice-growing districts. Figures for Baroda and other Native States have been added from 1913-14

(g) Includes Native States from 1913-14

(h) Season very favourable

(i) Revised since the issue of the Final General Memorandum in February 1917

Note.—Figures for 1916-17 are subject to revision

No. 5.—AREA AND YIELD OF WHEAT IN EACH PROVINCE

Area (acres)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Punjab (including Native States).	8,272,000	9,002,000	9,142,000	9,981,000	11,018,000	9,810,000	9,588,000	11,386,000	10,246,000	10,737,000
United Provinces	4,406,000	5,695,000	6,491,000	7,842,000	7,578,000	7,882,000	6,406,000	7,801,000	6,593,000	6,764,000
Central Provinces and Berar (a)	2,801,000	2,860,000	3,176,000	3,585,000	3,739,000	3,743,000	3,884,000	3,893,000	3,616,000	3,996,000
Central India States	1,694,000	2,046,000	2,913,000	2,460,000	2,563,000	3,216,000	2,695,000	3,098,000	2,949,000	3,517,000
Bombay (including Native States) (b)	1,678,000	1,746,000	1,820,000	1,855,000	1,284,000	1,735,000	2,102,000	2,253,000	2,232,000	2,250,000
Bihar and Orissa	(c)	(c)	(c)	1,312,000	1,285,000	1,270,000	1,842,000	1,218,000	1,830,000	1,808,000
North-West Frontier Province (d)	978,000	1,010,000	1,008,000	1,033,000	1,203,000	870,000	992,000	1,183,000	808,000	1,050,000
Hyderabad State	933,000	1,093,000	1,097,000	1,104,000	970,000	851,000	702,000	898,000	1,045,000	1,344,000
Rajputana States	604,000	899,000	1,085,000	1,187,000	963,000	1,014,000	622,000	902,000	649,000	1,147,000
Sind (including Native States)	417,000	518,000	471,000	560,000	391,000	487,000	490,000	706,000	588,000	620,000
Bengal (e)	1,096,000	1,332,000	1,600,000	143,000	143,000	146,000	144,000	134,000	181,000	129,000
Delhi	(f)	(f)	(f)	(f)	(g)	(g)	(g)	32,000	28,000	36,000
Ajmer-Merwara	(g)	(g)	(g)	(g)	(g)	(g)	5,000	19,000	12,000	28,000
Mysore State	2,000	2,000	3,000	3,000	1,000	4,000	3,000	4,000	4,000	5,000
TOTAL	22,911,000	26,236,000	28,106,000	30,565,000	31,141,000	30,043,000	28,475,000	32,475,000	30,320,000	33,040,000

Yield (tons)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Punjab (including Native States).	2,489,000	3,062,000	8,434,000	3,700,000	3,800,000	2,039,000	3,189,000	8,725,000	2,461,000	2,937,000
United Provinces	1,675,000	2,124,000	2,975,000	2,919,000	3,032,000	2,938,000	2,221,000	3,042,000	2,700,000	3,061,000
Central Provinces and Berar (a)	507,000	721,000	992,000	973,000	904,000	1,062,000	688,000	778,000	973,000	1,168,000
Central India States	271,000	397,000	514,000	592,000	680,000	1,049,000	490,000	642,000	645,000	898,000
Bombay (including Native States) (b)	336,000	393,000	451,000	505,000	265,000	543,000	506,000	605,000	569,000	594,000
Bihar and Orissa	(c)	(c)	(c)	570,000	557,000	529,000	583,000	347,000	581,000	598,000
North-West Frontier Province (d)	213,000	213,000	235,000	266,000	280,000	195,000	259,000	331,000	246,000	277,000
Hyderabad State	67,000	72,000	68,000	97,000	43,000	48,000	43,000	51,000	75,000	126,000
Rajputana States	188,000	199,000	266,000	265,000	204,000	244,000	122,000	217,000	110,000	265,000
Sind (including Native States)	113,000	134,000	132,000	136,000	97,000	204,000	107,000	811,000	212,000	181,000
Bengal (e)	321,000	334,000	566,000	35,000	47,000	51,000	51,000	32,000	40,000	40,000
Delhi	(f)	(f)	(f)	(f)	(g)	(g)	(g)	(g)	11,000	11,000
Ajmer-Merwara	(g)	(g)	(g)	(g)	(g)	(g)	2,000	5,000	2,000	11,000
Mysore State	600	200	400	500	500	1,000	1,000	1,000	1,000	1,000
TOTAL	6,125,000	7,033,200	9,630,400	10,081,500	9,824,500	9,555,000	8,355,000	10,087,000	8,652,000	10,158,000

(a) Includes the Native States of Khairgarh and Nandgaon

(b) Includes also the Native State of Baroda. Estimates for non-reporting tracts have been added from 1912-13

(c) Included under Bengal

(d) Includes the Tochi and the Kurram Agencies

(e) Includes Bihar and Orissa up to 1909-10

(f) Included under Punjab

(g) Not available

No. 6.—AREA AND YIELD OF SUGAR CANE IN EACH PROVINCE

Area (acres)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
United Provinces .	1,481,700	1,120,100	1,037,600	1,047,100	1,310,000	1,425,400	1,379,900	1,192,000	1,261,000	1,200,000
Punjab (a) .	301,800	365,700	403,800	387,900	284,800	367,000	410,000	366,000	347,000	410,000
Bihar and Orissa .	(b)	(b)	(b)	(b)	263,000	266,100	262,800	266,000	262,000	277,000
Bengal (c) .	607,200	553,000	507,800	515,600	223,300	221,600	218,300	233,000	231,000	220,000
Bombay (including Native States)(e) .	74,300	92,800	89,200	83,400	94,700	79,400	91,400	90,000	106,000	104,000
Madras .	49,000	43,700	43,800	47,900	107,700	98,800	83,600	74,000	65,000	114,000
Assam .	(b)	(b)	(b)	(b)	34,700	38,200	45,500	39,000	37,000	36,000
North-West Frontier Province (f) .	35,200	27,500	30,600	32,700	31,500	30,000	31,700	32,000	31,000	30,000
Central Provinces and Berar .	(d)	(d)	(d)	(d)	(d)	(d)	20,400	19,000	21,000	23,000
TOTAL .	2,639,200	2,202,800	2,112,800	2,114,600	2,380,300	2,520,700	2,545,500	2,311,000	2,391,000	2,411,000

Yield (tons) of raw sugar (gur)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
United Provinces .	916,700	844,200	955,200	1,012,900	1,250,300	1,301,500	974,500	1,153,000	1,278,000	1,115,000
Punjab (a) .	238,700	265,600	328,700	262,600	161,200	274,300	308,900	295,000	275,000	340,000
Bihar and Orissa .	(b)	(b)	(b)	(b)	303,800	292,700	289,100	277,000	260,000	305,000
Bengal (c) .	588,100	430,800	495,800	503,500	256,300	203,200	244,800	250,000	256,000	230,000
Bombay (including Native States)(e) .	184,200	221,200	232,300	226,000	214,000	180,700	228,000	210,000	291,000	291,000
Madras .	62,000	81,000	82,000	87,100	196,000	204,500	150,000	168,000	186,000	214,000
Assam .	(b)	(b)	(b)	(b)	28,000	33,100	30,400	31,000	29,000	29,000
North-West Frontier Province (f) .	32,200	30,100	33,100	35,700	31,900	33,600	35,100	36,000	33,300	35,000
Central Provinces and Berar .	(d)	(d)	(d)	(d)	(d)	(d)	21,700	22,000	26,000	28,000
TOTAL .	2,016,900	1,872,900	2,127,100	2,917,800	2,131,100	2,593,000	2,291,500	2,463,000	2,631,000	2,626,000

(a) Figures for years prior to 1913-14 exclude unimportant districts

(b) Included under Bengal

(c) Includes Bihar and Orissa and Assam down to 1910-11

(d) Not available

(e) Includes also the State of Bardia. Up to 1911-12 the figures related to the chief sugarcane-growing districts only; from 1912-13 those for other districts and for Sind have been added; estimates for non-reporting tracts have been added from 1909-10

(f) Up to 1912-13 the figures related to three selected districts. From 1913-14 all the districts including the Tochi Agency have been reported on

NOTE.—Figures for 1916-17 are subject to revision

No. 7.—AREA AND YIELD OF TEA IN EACH PROVINCE

Area (acres)

Province	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
Assam .	312,300	345,600	348,000	350,200	351,300	361,700	307,800	376,400	382,600	389,200
Bengal .	130,500	141,600	143,200	145,900	146,800	150,500	156,100	150,300	161,300	165,800
Travancore State .	26,000	27,100	26,200	30,400	32,000	34,100	37,400	38,800	40,700	42,000
Madras .	11,000	14,600	15,700	18,100	20,000	21,400	26,300	20,000	27,600	31,300
United Provinces .	8,000	8,100	8,100	7,000	7,000	7,800	8,000	8,000	7,900	8,000
Punjab .	9,400	9,400	9,400	9,400	9,400	9,300	9,300	9,000	9,000	9,000
Bihar and Orissa (a) .	1,700	1,700	1,700	1,700	2,300	2,300	2,200	2,200	2,200	2,200
Burma .	1,700	1,700	1,700	1,700	1,700	1,700	3,000	3,000	2,800	2,800
TOTAL .	537,900	548,100	555,300	563,600	574,600	591,500	610,100	621,500	635,200	651,200

Yield (lbs)

Province	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916
Assam .	161,191,800	166,450,900	174,861,200	176,005,100	170,053,000	198,708,300	190,722,000	208,227,100	215,385,000	242,184,600
Bengal .	60,216,600	59,971,600	60,020,700	64,674,200	61,050,000	70,524,200	80,106,700	76,873,200	89,526,100	92,645,000
Travancore State .	12,749,400	12,653,800	13,353,700	14,323,100	14,713,500	16,059,800	15,155,600	16,010,200	20,218,800	17,702,000
Madras .	3,470,600	4,436,400	5,025,700	5,615,200	5,795,100	7,556,800	7,089,000	8,607,800	11,381,600	11,566,200
United Provinces .	2,291,900	2,009,900	2,206,600	3,015,300	2,531,700	2,638,800	2,570,100	2,379,200	2,006,000	2,353,700
Punjab .	1,237,500	1,437,500	1,413,700	1,418,900	1,430,200	1,931,000	2,120,800	1,041,300	1,960,600	1,530,100
Bihar and Orissa (a) .	120,000	118,400	64,800	67,000	70,600	83,300	153,900	166,200	145,500	146,100
TOTAL .	241,292,000	247,021,600	256,136,400	263,269,100	268,003,700	207,878,100	307,349,000	312,970,200	371,936,700	368,527,600

(a) Figures for years down to 1910 are included under Bengal

Note.—Figures for 1916 are subject to revision

No. 8.—AREA AND YIELD OF COTTON IN EACH PROVINCE

Area (acres)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Bombay (including Native States) (a)	7,101,000	6,241,000	6,469,000	7,334,000	5,786,000	6,820,000	7,323,000	7,796,000	5,005,000	6,394,000
Central Provinces and Berar	4,432,000	4,176,000	4,167,000	4,487,000	4,648,000	4,493,000	4,754,000	4,708,000	4,061,000	4,401,000
Hyderabad State	3,100,000	2,902,000	3,401,000	3,562,000	3,294,000	2,888,000	3,653,000	3,805,000	2,964,000	3,200,000
Madras (b)	1,855,000	1,576,000	1,569,000	1,873,000	2,878,000	2,414,000	2,725,000	2,115,000	2,061,000	2,288,000
Punjab (including Native States)	1,474,000	1,562,000	1,436,000	1,385,000	1,582,000	1,575,000	2,053,000	1,857,000	902,000	1,171,000
United Provinces (c)	1,401,000	1,392,000	1,241,000	1,847,000	921,000	1,158,000	1,586,000	1,551,000	834,000	1,184,000
Central India States	993,000	978,000	1,068,000	1,349,000	1,400,000	1,314,000	1,426,000	1,519,000	999,000	1,411,000
Rajputana States	438,000	389,000	464,000	465,000	263,000	393,000	470,000	421,000	244,000	334,000
Sind (including Native States)	259,000	259,000	214,000	278,000	345,000	296,000	341,000	336,000	161,000	231,000
Burma	195,000	204,000	193,000	167,000	186,000	233,000	200,000	270,000	187,000	223,000
Mysore	84,000	65,000	81,000	101,000	101,000	154,000	93,000	109,000	92,000	126,000
Bihar and Orissa	(d)	(d)	(d)	(d)	88,000	92,000	73,000	70,000	67,000	69,000
North-West Frontier Province (e)	48,000	54,000	32,000	38,000	56,000	56,000	50,000	60,000	26,000	28,000
Bengal (including Native State) (f)	149,000	101,000	166,000	169,000	63,000	51,000	87,000	90,000	88,000	73,000
Ajmer-Merwara	41,000	40,000	39,000	45,000	27,000	50,000	57,000	54,000	23,000	47,000
Assam	(d)	(d)	(d)	(d)	36,000	35,000	33,000	34,000	32,000	32,000
TOTAL	21,630,000	19,099,000	20,545,000	22,596,000	21,615,000	22,028,000	25,023,000	24,595,000	17,746,000	21,212,000

Yield (bales of 400 lbs each)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Bombay (including Native States) (a)	1,039,000	1,282,000	1,661,000	1,450,000	895,000	1,520,000	1,614,000	1,773,000	1,051,000	1,519,000
Central Provinces and Berar	595,000	766,000	1,070,000	629,000	618,000	910,000	981,000	1,097,000	1,106,000	600,000
Hyderabad State	293,000	307,000	461,000	293,000	300,000	300,000	490,000	400,000	450,000	500,000
Madras (b)	198,000	162,000	180,000	235,000	335,000	471,000	308,000	245,000	245,000	377,000
Punjab (including Native States)	356,000	324,000	396,000	308,000	211,000	373,000	612,000	496,000	195,000	338,000
United Provinces (c)	268,000	426,000	384,000	348,000	251,000	428,000	434,000	486,000	262,000	309,000
Central India States	55,000	144,000	221,000	237,000	228,000	206,000	278,000	293,000	216,000	309,000
Rajputana States	91,000	80,000	148,000	143,000	73,000	125,000	132,000	166,000	62,000	119,000
Sind (including Native States)	135,000	101,000	104,000	97,000	124,000	123,000	135,000	110,000	48,000	74,000
Burma	29,000	41,000	32,000	28,000	32,000	46,000	54,000	42,000	27,000	46,000
Mysore	6,000	3,000	6,000	10,000	17,000	19,000	11,000	14,000	14,000	16,000
Bihar and Orissa	(d)	(d)	(d)	(d)	19,000	19,000	17,000	16,000	16,000	10,000
North West Frontier Province (e)	9,000	12,000	7,000	8,000	12,000	18,000	14,000	14,000	4,000	6,000
Bengal (including Native State) (f)	38,000	35,000	36,000	49,000	25,000	21,000	24,000	34,000	30,000	20,000
Ajmer-Merwara	19,000	9,000	13,000	20,000	12,000	20,000	16,000	15,000	2,000	19,000
Assam	(d)	(d)	(d)	(d)	11,000	10,000	12,000	12,000	10,000	11,000
TOTAL	3,122,000	3,692,000	4,718,000	3,853,000	3,288,000	4,610,000	5,066,000	5,209,000	3,738,000	4,273,000
Net Exports and Consumption (g)	3,782,401	4,200,150	4,928,000	4,303,000	3,985,000	4,493,000	5,013,000	4,889,000	5,109,000	4,760,000

(a) Includes also the State of Baroda. Estimates for non-reporting tracts have been added from 1909-10

(b) Includes Native States.

(c) Includes the Native State of Rampur

(d) Included under Bengal

(e) Includes the Tochi and the Kurram Agencies from 1913-14

(f) Includes Bihar and Orissa and Assam down to 1910-11

(g) The exports as well as the mill consumption are for the year ending September up to 1910-11; from 1911-12 to 1915-16 they are for the year ending August; for 1916-17 they relate to the year ending June 1917. No reliable information exists as to the annual consumption outside the mills, but in 1911 it was settled in consultation with the Bombay Cotton Trade Association to adopt the conventional estimate of 450,000 bales. This figure has been included in the figure for each year shown against this item up to 1913-14. The consumption for 1914-15 was estimated at 1,000,000 bales and that for 1915-16 and 1916-17 at 750,000 bales each year by the Association.

Note.—Figures for 1916-17 are subject to revision

No. 9.—AREA AND YIELD OF JUTE IN EACH PROVINCE

Area (acres)

Province	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917
Bengal (a)	2,700,300	2,773,100	2,841,000	2,737,000	2,536,900	2,456,000	2,872,600	2,080,300	2,351,800	2,376,200
Bihar and Orissa	(b)	(b)	(b)	258,100	298,300	318,400	330,100	188,100	221,000	228,300
Assam	68,400	88,600	82,200	90,700	95,700	97,000	111,000	74,000	96,100	94,000
Cooch Bihar State	22,000	20,000	14,000	20,000	39,600	39,000	44,400	27,500	31,800	36,200
TOTAL	2,856,700	2,876,600	2,037,900	3,106,400	2,970,500	2,911,000	3,358,700	2,375,000	2,702,700	2,729,700

Yield (bales of 400 lbs each)

Province	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917
Bengal (a)	6,132,700	6,092,500	7,735,800	7,247,800	8,008,300	7,939,000	9,308,000	6,506,100	7,420,900	7,854,000
Bihar and Orissa	(b)	(b)	(b)	705,500	702,000	692,900	693,200	609,800	652,000	669,800
Assam	138,500	180,600	177,800	239,000	226,800	228,300	307,500	152,900	255,700	221,100
Cooch Bihar State	39,600	33,600	18,000	42,000	124,800	122,600	135,200	72,300	68,000	95,000
TOTAL (c)	6,310,900	7,206,000	7,932,000	8,234,700	9,842,800	8,893,900	10,413,900	7,349,900	8,305,600	8,839,900
Exports and consumption (d)	8,806,000	9,128,000	8,143,000	9,001,000	10,027,000	9,309,000	8,469,000	9,427,000	9,018,000	(e)

(a) Includes Bihar and Orissa down to 1910

(b) Included under Bengal

(c) Excluding Nepal, for which no estimate of area or yield is available. The figures of imports from Nepal are, however, stated below:

	Bales		Bales		Bales
1907	88,000	1910	70,000	1913	105,000
1908	88,000	1911	57,000	1914	37,000
1909	81,000	1912	96,000	1915	92,000

(d) The exports as well as mill consumption are for the year ending June. The mill consumption and the extra-factory consumption (the latter being 600,000 bales for each year) are the trade estimates

(e) Not yet available

No. 10.—AREA AND YIELD OF LINSEED IN EACH PROVINCE
Area (acres)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Central Provinces and Berar	547,600	954,700	920,200	1,050,100	1,855,800	1,500,000	952,100	1,224,000	1,049,000	1,176,000
United Provinces (a)	67,500	194,700	303,400	472,500	648,600	493,500	240,600	206,000	295,000	351,000
Bihar and Orissa	269,000	499,000	697,000	656,000	747,000	667,000	567,000	620,000	650,000	675,000
(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Hyderabad State	484,800	566,400	518,900	631,300	603,500	512,400	412,600	234,000	289,000	321,000
Bengal (c)	580,400	634,600	673,400	196,900	206,800	100,800	193,700	162,000	181,000	157,000
Bombay (including Native States)	151,100	153,600	134,200	194,700	205,300	171,000	173,100	120,000	176,000	148,000
Punjab	(d)	(d)	(d)	(d)	(d)	43,300	39,000	49,000	(e) 32,000	(e) 33,000
Total (a)	1,830,400	2,498,000	2,691,100	3,050,400	4,291,000	3,437,900	2,661,000	2,795,000	2,653,000	2,857,000
	269,000	499,000	597,000	636,000	747,000	607,000	507,000	620,000	650,000	675,000
GRAND TOTAL	2,099,400	2,997,000	3,188,100	3,742,400	5,039,000	4,121,000	3,031,000	3,326,000	3,333,000	3,592,000

Yield (tons)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Central Provinces and Berar	23,500	30,000	30,300	124,500	189,000	141,800	79,700	80,000	83,000	99,000
United Provinces (a)	6,500	30,400	62,000	101,900	160,700	96,500	98,800	48,000	59,000	72,000
Bihar and Orissa	50,000	78,000	120,000	142,000	140,000	129,000	59,000	110,000	130,000	138,000
(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)	(b)
Hyderabad State	13,600	17,200	18,400	30,400	26,600	103,700	149,700	102,000	136,000	147,000
Bengal (c)	85,900	72,500	121,200	30,700	39,200	37,400	34,200	26,000	28,000	25,000
Bombay (including Native States)	4,000	8,700	12,900	28,300	15,000	17,400	14,000	17,000	25,000	20,000
Punjab	(d)	(d)	(d)	(d)	(d)	(d)	3,300	5,000	3,000	3,000
Total (a)	183,500	219,700	307,800	429,300	504,900	414,100	327,200	297,900	340,900	389,000
	80,000	78,000	120,000	942,000	140,000	128,000	59,000	110,000	130,000	188,000
GRAND TOTAL	163,500	207,700	427,500	671,300	641,900	512,100	380,200	397,000	476,000	520,000

(a) The figures in italics represent "mixed" crop, i.e., seed sown in the same fields with other crops. The estimates for the mixed crop of the United Provinces are highly conjectural; hence they have been kept separate.

(b) Included under Bengal (c) Includes Bihar and Orissa down to 1909-10

(d) Not available

(e) Revised since the issue of the Final General Memorandum in May 1917

Note 6.—Figures for 1916-17 are subject to revision

RAPE AND MUSTARD

14

No. 11.—AREA AND YIELD OF RAPE AND MUSTARD IN EACH PROVINCE

Area (acres)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
United Provinces (a)	96,800	130,800	178,900	146,200	176,200	145,000	150,400	190,000	181,000	156,000
	<i>1,870,000</i>	<i>2,153,000</i>	<i>2,269,000</i>	<i>2,371,000</i>	<i>2,872,000</i>	<i>2,873,000</i>	<i>2,154,000</i>	<i>2,350,000</i>	<i>2,400,000</i>	<i>2,500,000</i>
Punjab (b)	842,800	1,155,900	1,320,900	1,089,000	1,414,100	887,800	1,002,900	1,047,000	1,129,000	(g) 1,016,000
Bengal (c)	1,889,100	1,854,900	2,278,300	1,870,700	1,317,500	1,825,400	1,312,600	1,303,000	1,322,000	1,225,000
Bihar and Orissa	(d)	(d)	(d)	765,700	780,100	723,300	751,900	681,000	725,000	753,000
Assam	261,000	284,300	320,100	318,100	258,100	295,000	299,200	304,000	325,000	284,000
North-West Frontier Province	121,000	226,900	91,700	85,100	94,200	75,700	141,300	114,000	110,000	103,000
Bombay (including Native States) (e)	46,900	80,800	86,900	81,800	17,600	75,700	83,500	83,000	36,000	53,000
Sind (including Native States) (f)	63,100	120,400	69,700	76,200	54,000	43,800	365,000	428,000	203,000	279,000
Hyderabad State	9,500	12,500	8,100	9,300	6,500	11,100	6,600	7,000	6,000	6,000
TOTAL (a)	<i>8,930,200</i>	<i>8,875,500</i>	<i>4,961,600</i>	<i>8,944,900</i>	<i>4,118,800</i>	<i>8,582,800</i>	<i>4,112,400</i>	<i>4,157,000</i>	<i>4,037,000</i>	<i>3,940,000</i>
	<i>1,870,000</i>	<i>2,153,000</i>	<i>2,269,000</i>	<i>2,371,000</i>	<i>2,872,000</i>	<i>2,873,000</i>	<i>2,154,000</i>	<i>2,350,000</i>	<i>2,400,000</i>	<i>2,500,000</i>
GRAND TOTAL	5,200,200	6,029,500	6,630,600	6,315,000	6,990,300	5,955,800	6,266,400	6,507,000	6,437,000	6,440,000

Yield (tons)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
United Provinces (a)	11,300	26,900	36,000	34,400	37,200	33,900	23,000	43,000	34,000	29,000
	<i>217,000</i>	<i>423,000</i>	<i>466,000</i>	<i>561,000</i>	<i>609,000</i>	<i>551,000</i>	<i>327,000</i>	<i>530,000</i>	<i>450,000</i>	<i>468,000</i>
Punjab (b)	110,000	183,900	226,900	155,100	198,600	156,600	165,000	175,000	146,000	(g) 159,000
Bengal (c)	275,600	231,900	440,100	238,600	243,900	265,800	266,200	230,000	233,000	238,000
Bihar and Orissa	(d)	(d)	(d)	168,800	171,900	143,500	165,700	98,000	137,000	167,000
Assam	42,700	46,400	60,500	50,000	47,600	58,400	61,300	58,000	60,000	49,000
North-West Frontier Province	12,300	28,600	7,900	9,500	12,100	7,200	15,900	16,000	19,000	16,000
Bombay (including Native States) (e)	12,500	28,200	22,600	15,400	2,600	20,000	21,300	21,000	6,000	14,000
Sind (including Native States) (f)	6,400	23,400	10,100	11,100	4,700	4,600	42,000	48,000	17,000	42,000
Hyderabad State	200	200	100	200	100	200	100	200	100	200
TOTAL (a)	<i>471,000</i>	<i>564,500</i>	<i>801,200</i>	<i>689,100</i>	<i>716,700</i>	<i>690,200</i>	<i>760,500</i>	<i>659,200</i>	<i>662,100</i>	<i>713,200</i>
	<i>217,000</i>	<i>423,000</i>	<i>466,000</i>	<i>561,000</i>	<i>609,000</i>	<i>551,000</i>	<i>327,000</i>	<i>530,000</i>	<i>450,000</i>	<i>468,000</i>
GRAND TOTAL	688,600	987,500	1,270,200	1,250,100	1,325,700	1,241,200	1,097,500	1,219,200	1,102,100	1,181,200

(a) The figures in italics represent "mixed" crop, i.e., seed sown in the same fields with other crops. The estimates for the mixed crop of the United Provinces are highly conjectural; hence they have been kept separate.

(b) Figures for years prior to 1913-14 exclude unimportant districts.

(c) Includes Bihar and Orissa down to 1909-10.

(d) Included under Bengal.

(e) Includes also the State of Baroda; up to 1911-12, the estimates related to chief rapeseed-growing districts; those for other districts have been added from 1912-13.

(f) Estimates for *jambo* (*Eruca Sativa*) grown in Sind have been added from 1913-14.

(g) Revised since the issue of the Final General Memorandum in May 1917.

Notes.—Figures for 1916-17 are subject to revision.

No. 12.—AREA AND YIELD OF SESAMUM (*Til or Jinjili*) IN EACH PROVINCE

Area (acres)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
United Provinces (a)	329,800	322,000	481,300	438,900	375,000	317,200	378,400	372,000	299,000	280,000
	900,000	1,000,000	900,000	900,000	800,000	900,000	850,000	1,000,000	1,100,000	1,000,000
Bombay (including Native States) (b)	992,700	979,600	1,037,400	991,800	649,000	793,300	851,200	1,055,000	820,000	880,000
Central Provinces and Berar . .	977,600	700,000	912,700	893,300	880,700	778,000	865,700	878,000	927,000	759,000
Madras . .	647,000	685,900	718,000	573,200	887,200	823,700	809,300	861,000	823,000	791,000
Hyderabad State . .	610,000	611,900	697,300	677,700	663,900	649,100	612,000	599,000	546,000	569,000
Bengal (c) . .	419,400	433,100	491,800	489,100	271,800	204,800	211,000	251,000	248,000	234,000
Bihar and Orissa . .	(e)	(e)	(e)	(e)	214,600	223,700	219,700	206,000	198,000	191,000
Punjab (d) . .	84,100	164,700	175,600	148,700	91,100	156,500	144,100	222,000	127,000	239,000
Sind (including Native States) . .	65,000	80,500	67,000	88,300	58,200	72,300	91,300	86,000	17,000	30,000
Ajmer-Merwara . .	(f)	(f)	(f)	(f)	(f)	(f)	11,500	35,000	5,000	39,000
Assam . .	(f)	(f)	(f)	(e)	9,700	10,600	(g) 1,400	(i)	(i)	(i)
TOTAL (a) . .	4,016,800	3,987,900	4,615,000	4,300,000	4,003,100	4,089,500	4,226,000	4,686,000	4,008,000	4,015,000
	900,000	1,000,000	900,000	900,000	800,000	900,000	850,000	1,000,000	1,100,000	1,000,000
GRAND TOTAL . .	4,916,800	4,987,900	6,116,000	6,200,000	4,809,100	4,989,500	5,076,000	5,665,000	6,108,000	5,015,000

Yield (tons)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
United Provinces (a)	10,000	34,000	48,700	46,400	29,000	31,000	18,000	31,000	36,000	28,000
	30,000	100,000	90,000	90,000	70,000	100,000	42,000	65,000	90,000	80,000
Bombay (including Native States) (b)	61,400	69,600	132,400	109,400	31,700	96,300	89,700	164,000	98,000	120,000
Central Provinces and Berar . .	55,400	59,900	91,900	70,100	72,300	60,900	69,400	82,000	93,000	56,000
Madras . .	53,100	57,200	59,700	49,300	78,300	65,500	72,100	77,000	70,000	87,000
Hyderabad State . .	20,000	18,700	24,600	31,100	25,400	32,500	23,100	27,000	22,000	31,000
Bengal (c) . .	46,800	59,000	88,400	70,400	41,500	35,100	29,000	29,000	27,000	25,000
Bihar and Orissa . .	(e)	(e)	(e)	(e)	33,500	25,000	31,100	26,000	30,000	31,000
Punjab (d) . .	4,700	23,700	18,600	11,900	9,000	16,000	13,800	24,000	15,000	29,000
Sind (including Native States) . .	4,200	12,300	6,500	12,600	4,800	0,000	10,700	6,000	1,000	8,000
Ajmer-Merwara . .	(f)	(f)	(f)	(f)	(f)	(f)	100	1,000	(h)	3,000
Assam . .	(f)	(f)	(f)	(e)	1,300	1,800	(g) 200	(i)	(i)	(i)
TOTAL (a) . .	255,700	364,300	470,800	421,800	327,000	374,000	361,500	466,000	392,000	413,000
	80,000	100,000	90,000	90,000	70,000	100,000	42,000	85,000	90,000	80,000
GRAND TOTAL . .	285,700	464,300	560,800	511,800	397,000	474,000	403,500	551,000	482,000	493,000

(a) The figures in italics represent "mixed" crop, i.e., seed sown in the same fields with other crops. The estimates for the mixed crop of the United Provinces are highly conjectural; hence they have been kept separate.

(b) Includes also the State of Baroda. Estimates for non-reporting tracts have been added from 1912-13.

(c) Includes Bihar and Orissa down to 1910-11 and Assam for 1910-11.

(d) Figures for years prior to 1913-14 exclude unimportant districts.

(e) Included under Bengal.

(f) Not available.

(g) Early crop only.

(h) Less than 100 tons.

(i) Forecast discontinued.

No. 13.—AREA AND YIELD OF GROUNDNUT IN EACH PROVINCE

Area (acres)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Madras	601,800	718,700	740,100	667,300	806,000	924,200	1,603,200	1,866,000	1,145,000	1,813,000
Bombay (including Native States) (a)	129,800	133,700	162,300	185,800	269,300	242,700	254,100	278,000	266,000	226,000
Burma (b)	137,000	258,600	146,300	98,800	138,800	199,500	246,600	269,000	262,000	258,000
TOTAL	868,600	1,111,000	1,018,700	951,900	1,214,100	1,366,400	2,105,900	2,413,000	1,673,000	2,317,000

Yield (tons) of nuts in shell

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Madras	202,300	246,500	221,900	254,200	308,000	341,100	411,300	580,000	633,000	825,000
Bombay (including Native States) (a)	82,500	120,500	172,700	207,100	248,300	239,500	249,500	279,000	309,000	208,000
Burma (b)	67,700	119,700	64,700	41,900	51,400	89,300	88,000	88,000	110,000	114,000
TOTAL	352,500	405,700	459,300	503,200	603,700	669,900	748,800	947,000	1,058,000	1,147,000

(a) Up to 1913-14 the figures related to chief groundnut-growing districts; those for other districts have been added from 1914-15.
Estimates for non-reporting tracts have been added from 1909-10.

(b) The figures down to 1911-12 related to the principal groundnut-growing districts. From 1912-13 estimates for other districts also have been included.

Note.—Figures for 1916-17 are subject to revision

No. 14.—AREA AND YIELD OF INDIGO IN EACH PROVINCE

Area (acres)

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Bihar and Orissa (a)	146,800	135,300	107,400	117,000	109,600	90,100	63,100	38,500	60,800	80,600
Madras	141,900	81,800	96,400	82,800	90,300	61,500	55,300	71,700	222,000	449,900
Punjab (b)	57,900	36,200	49,400	45,400	36,600	37,300	22,400	20,400	21,400	57,400
United Provinces (c)	47,300	30,600	41,900	31,200	29,400	26,900	24,400	12,300	43,200	159,300
Bombay and Sind (including Native States)	(d)	(d)	(d)	(d)	(d)	(d)	6,200	4,200	4,100	7,000
Bengal	(e)	(e)	(e)	(e)	1,000	1,000	1,300	1,300	1,600	2,200
TOTAL	393,900	283,900	289,100	276,400	268,900	216,800	172,600	148,400	353,100	766,400

Yield (cwts) of dye

Province	1907-08	1908-09	1909-10	1910-11	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
Bihar and Orissa (a)	17,700	17,000	11,400	13,900	17,800	14,700	7,000	5,500	7,100	10,900
Madras	20,000	12,400	11,400	20,100	21,200	14,800	11,500	13,600	40,500	59,100
Punjab (b)	9,000	5,600	8,300	8,500	5,600	6,000	3,500	3,400	2,700	9,900
United Provinces (c)	5,600	3,300	5,200	3,500	3,000	3,500	3,000	1,500	4,000	14,100
Bombay and Sind (including Native States)	(d)	(d)	(d)	(d)	(d)	(d)	1,700	1,000	600	1,300
Bengal	(e)	(e)	(e)	(e)	100	100	100	200	200	200
TOTAL	52,800	38,800	39,300	46,000	47,700	39,100	26,800	25,200	55,100	95,500

(a) Includes Bengal down to 1910-11

(b) Figures for years prior to 1913-14 exclude unimportant districts

(c) In estimating the yield in the United Provinces it is assumed that one-tenth of the whole area is annually set aside for seed

(d) No information

(e) Included under Bihar and Orissa

Note.—Figures for 1916-17 are subject to revision

17

BARLEY, JAWAR

No. 15.—SUPPLEMENTARY TABLE—AREA AND YIELD OF BARLEY, JAWAR,
BAJRA, MAIZE, AND GRAM IN EACH PROVINCE.

Province	Area (acres)						JAWAR						
	BARLEY						JAWAR						
	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17		1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
United Provinces	5,103,000	4,801,000	4,375,000	4,570,000	6,020,000	5,000,000	1,633,000	2,100,000	2,003,000	2,413,000	2,514,000	2,402,000	
Madras	8,000	8,000	3,000	3,000	3,000	3,000	(a)	8,160,000	5,220,000	5,700,000	5,102,000	5,625,000	(a)
Bihar and Orissa	1,340,000	1,201,000	1,305,000	1,287,000	1,914,000	1,203,000	65,000	64,000	120,000	107,000	103,000	60,000	
Bombay	26,000	28,000	23,000	23,000	42,000	25,000	5,878,000	6,820,000	6,600,000	6,504,000	7,058,000	7,293,000	
Sind	10,000	20,000	28,000	31,000	29,000	23,000	350,000	602,000	683,000	646,000	430,000	701,000	
Bengal	65,000	63,000	61,000	63,000	61,000	60,000	2,000	3,000	2,000	2,000	3,000	3,000	
Punjab	1,340,000	1,007,000	870,000	1,303,000	1,010,000	1,163,000	653,000	1,212,000	1,218,000	1,276,000	1,001,000	1,404,000	
Central Provinces and Bihar	(6)23,000	(6)10,000	(6)5,000	(6)11,000	(6)10,000	(a)	4,049,000	5,001,000	3,010,000	4,200,000	4,034,000	(a)	
Burma	...	...	...	...	...	...	...	...	...	...	...	...
Assam	...	...	...	...	...	...	...	...	...	...	...	...
North-West Frontier Province	1,000	1,000	210,000	232,000	260,000	631,000	636,000	666,000
Ajmer-Merwara	294,000	214,000	201,000	422,000	314,000	218,000	63,000	85,000	103,000	120,000	40,000	107,000	
Total	6,378,000	7,205,000	7,151,000	7,821,000	7,651,000	7,607,000	21,020,000	21,373,000	21,167,000	22,002,000	12,891,000	(c)	

Province	BARLEY						JAWAR					
	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
United Provinces	(a)	(a)	1,678,000	2,015,000	2,220,000	2,860,000	535,000	613,000	227,000	130,000	156,000	523,000
Madras	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
Bihar and Orissa	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
Bombay	670,000	623,000	667,000	420,000	492,000	610,000	(a)	1,082,000	1,165,000	1,285,000	33,000	26,000
Sind	0,000	10,000	7,000	0,000	18,000	0,000	810,000	1,415,000	1,376,000	1,683,000	2,007,000	1,707,000
Bengal	5,000	7,000	10,000	11,000	8,000	0,000	105,000	106,000	204,000	221,000	120,000	302,000
Punjab	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	1,000	1,000
Central Provinces and Bihar	362,000	280,000	265,000	377,000	328,000	260,000	15,000	163,000	118,000	118,000	109,000	120,000
Burma	(a)	(a)	(a)	(a)	(a)	(a)	150,000	163,000	118,000	118,000	109,000	120,000
Assam	...	...	...	...	...	...	...	...	...	...	...	...
North-West Frontier Province	(a)	(a)	...	...	...	...	10,000	82,000	101,000	81,000	82,000	89,000
Ajmer-Merwara	(a)	68,000	140,000	180,000	125,000	87,000	(a)	15,000	10,000	10,000	8,000	11,000
Total (a)	875,000	678,000	3,061,000	3,001,000	3,184,000	3,331,000	2,473,000	4,325,000	4,010,000	5,101,000	5,010,000	2,700,000

Note.—No forecast is prepared for the crops dealt with in this table. The figures are taken from Agricultural Statistics obtained from local authorities

(a) Not available

(b) Excludes Madras and Central Provinces and Bihar

(c) Incomplete

(d) Not yet reported

(e) Taken from Agricultural Statistics

(f) Taken from Agricultural Statistics

(g) Excludes Madras and Central Provinces and Bihar

(h) Incomplete

(i) Taken from Agricultural Statistics

(j) Excludes Madras and Central Provinces and Bihar

(k) Incomplete

(l) Taken from Agricultural Statistics

(m) Excludes Madras and Central Provinces and Bihar

(n) Incomplete

(o) Taken from Agricultural Statistics

(p) Excludes Madras and Central Provinces and Bihar

(q) Incomplete

(r) Taken from Agricultural Statistics

(s) Excludes Madras and Central Provinces and Bihar

(t) Incomplete

(u) Taken from Agricultural Statistics

(v) Excludes Madras and Central Provinces and Bihar

(w) Incomplete

(x) Taken from Agricultural Statistics

(y) Excludes Madras and Central Provinces and Bihar

(z) Incomplete

(aa) Taken from Agricultural Statistics

(bb) Excludes Madras and Central Provinces and Bihar

(cc) Incomplete

(dd) Taken from Agricultural Statistics

(ee) Excludes Madras and Central Provinces and Bihar

(ff) Incomplete

(gg) Taken from Agricultural Statistics

(hh) Excludes Madras and Central Provinces and Bihar

(ii) Incomplete

(jj) Taken from Agricultural Statistics

(kk) Excludes Madras and Central Provinces and Bihar

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(mm) Taken from Agricultural Statistics

(nn) Excludes Madras and Central Provinces and Bihar

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(pp) Taken from Agricultural Statistics

(qq) Excludes Madras and Central Provinces and Bihar

(rr) Incomplete

(ss) Taken from Agricultural Statistics

(tt) Excludes Madras and Central Provinces and Bihar

(uu) Incomplete

(vv) Taken from Agricultural Statistics

(ww) Excludes Madras and Central Provinces and Bihar

(xx) Incomplete

(yy) Taken from Agricultural Statistics

(zz) Excludes Madras and Central Provinces and Bihar

(aa) Incomplete

(bb) Taken from Agricultural Statistics

(cc) Excludes Madras and Central Provinces and Bihar

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(ee) Taken from Agricultural Statistics

(ff) Excludes Madras and Central Provinces and Bihar

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(ii) Excludes Madras and Central Provinces and Bihar

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(ll) Excludes Madras and Central Provinces and Bihar

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(uu) Excludes Madras and Central Provinces and Bihar

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(xx) Excludes Madras and Central Provinces and Bihar

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(zz) Taken from Agricultural Statistics

(aa) Excludes Madras and Central Provinces and Bihar

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(dd) Excludes Madras and Central Provinces and Bihar

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(oo) Taken from Agricultural Statistics

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(xx) Taken from Agricultural Statistics

(yy) Excludes Madras and Central Provinces and Bihar

(zz) Incomplete

(aa) Taken from Agricultural Statistics

(bb) Excludes Madras and Central Provinces and Bihar

(cc) Incomplete

(dd) Taken from Agricultural Statistics

(ee) Excludes Madras and Central Provinces and Bihar

(ff) Incomplete

(gg) Taken from Agricultural Statistics

(hh) Excludes Madras and Central Provinces and Bihar

No. 15.—SUPPLEMENTARY TABLE—AREA AND YIELD OF BARLEY, JAWAR, BAJRA, MAIZE, AND GRAM IN EACH PROVINCE—*contd.**Area (acres)*

Province	BAJRA						MAIZE					
	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
United Provinces	2,850,000	2,618,000	2,158,000	2,770,000	2,808,000	2,518,000	1,791,000	2,205,000	2,126,000	2,376,000	2,612,000	2,425,000
Madras	3,351,000	3,606,000	3,273,000	3,182,000	3,673,000	(2)	118,000	131,000	121,000	164,000	124,000	(3)
Bihar and Orissa	67,000	74,000	75,000	73,000	73,000	70,000	1,661,000	1,602,000	1,714,000	1,492,000	1,656,000	1,581,000
Bombay	4,362,000	5,168,000	4,806,000	5,110,000	4,022,000	4,527,000	163,000	162,000	150,000	156,000	173,000	176,000
Sind	415,000	1,111,000	1,110,000	1,090,000	538,000	1,139,000	2,000	2,000	2,000	1,000	2,000	2,000
Bengal	6,000	7,000	0,000	6,000	6,000	6,000	95,000	97,000	92,000	95,000	96,000	168,000
Punjab	1,165,000	2,677,000	2,820,000	2,738,000	1,907,000	3,033,000	955,000	1,038,000	1,082,000	1,037,000	1,181,000	1,270,000
Central Provinces and Berar	117,000	154,000	116,000	146,000	185,000	(4)	(c) 144,000	(c) 150,000	(c) 151,000	(c) 156,000	(c) 153,000	(5)
Burma . . . . .	...	...	...	...	...	...	165,000	172,000	170,000	168,000	167,000	168,000
Assam . . . . .	...	...	...	...	...	...	10,000	10,000	18,000	10,000	10,000	10,000
North-West Frontier Province	58,000	205,000	183,000	230,000	72,000	263,000	410,000	410,000	431,000	418,000	431,000	451,000
Ajmer-Merwara	(c) 11,000	(c) 31,000	(c) 30,000	(c) 40,000	31,000	52,000	(c) 41,000	(c) 48,000	(c) 67,000	(c) 71,000	60,000	60,000
Total	12,173,000	16,671,000	14,756,000	16,702,000	11,283,000	11,037,000	5,587,000	6,325,000	6,116,000	6,114,000	6,070,000	6,231,000

Yield (tons)

Province	BAJRA						MAIZE					
	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
United Provinces	601,000	611,000	200,000	612,000	620,000	460,000	703,000	920,000	721,000	1,050,000	1,183,000	953,000
Madras	(6)	551,000	535,000	699,000	719,000	(2)	(c)	(a)	(a)	(a)	(a)	(a)
Bihar and Orissa	(n)	(a)	(a)	(a)	27,000	23,000	519,000	530,000	1,641,000	385,000	460,000	523,000
Bombay	340,000	560,000	655,000	731,000	703,000	670,000	27,000	53,000	60,000	72,000	62,000	107,000
Sind	105,000	255,000	181,000	163,000	110,000	238,000	1,000	1,000	1,000	1,000	1,000	1,000
Bengal	(a)	(a)	(a)	(a)	-2,000	1,000	28,000	30,000	24,000	27,000	28,000	28,000
Punjab	97,000	315,000	302,000	316,000	150,000	511,000	366,000	413,000	541,000	283,000	464,000	481,000
Central Provinces and Berar . . . . .	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)	(a)
Burma . . . . .	...	...	...	...	...	...	63,000	75,000	68,000	51,000	70,000	35,000
Assam . . . . .	...	...	...	...	...	...	(a)	(a)	(a)	(a)	(a)	(a)
North-West Frontier Province	(a)	33,000	37,000	48,000	12,000	41,000	184,000	188,000	228,000	203,000	237,000	219,000
Ajmer-Merwara	(a)	(a)	(a)	(a)	300	8,000	(a)	(a)	(a)	(a)	6,000	19,000
Total (b)	1,144,000	9,323,000	1,070,000	2,605,000	2,370,300	1,093,000	1,010,000	2,211,000	2,083,000	2,092,000	2,502,000	2,314,000

(a) Not available

(b) Incomplete

(c) Excludes Madras and Central Provinces and Berar

(d) Taken from Agricultural Statistics

(e) Not yet reported

(f) Excludes Madras.

Note.—No forecast is prepared for the crops dealt with in this table. The figures are taken from the provincial Season and Crop Reports or specially obtained from local authorities.

No. 15.—SUPPLEMENTARY TABLE—AREA AND YIELD OF BARLEY, JAWAR, BAJRA, MAIZE, AND GRAM IN EACH PROVINCE—*concl.**Area (acres)*

Province	GRAM					
	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
United Provinces	6,973,000	5,807,000	3,037,000	5,343,000	6,043,000	6,487,000
Madras	135,000	138,000	160,000	135,000	150,000	(f)
Bihar and Orissa	1,032,000	915,000	1,079,000	1,205,000	1,402,000	1,398,000
Bombay	372,000	475,000	453,000	480,000	504,000	627,000
Sind	76,000	75,000	98,000	111,000	151,000	158,000
Bengal	177,000	181,000	108,000	182,000	177,000	163,000
Punjab	4,100,000	3,401,000	2,619,000	5,103,000	3,665,000	5,110,000
Central Provinces and Berar	(b) 618,000	(b) 608,000	(b) 920,000	(b) 832,000	(b) 783,000	(f)
Burma	40,000	34,000	42,000	48,000	64,000	62,000
Assam	1,000	1,000	...	...	...	...
North-West Frontier Province	174,000	169,000	100,000	203,000	143,000	210,000
Ajmer-Merwara	(c) 26,000	(c) 0,000	(c) 1,000	(c) 21,000	19,000	0,000
Total	13,811,000	11,710,000	8,951,000	13,578,000	13,221,000	14,235,000(g)

Yield (tons)

Province	GRAM					
	1911-12	1912-13	1913-14	1914-15	1915-16	1916-17
United Provinces	2,403,000	1,817,000	(d) 531,000	1,773,000	2,025,000	2,288,000
Madras	(e)	8,000	(e)	(e)	(e)	(e)
Bihar and Orissa	436,000	361,000	417,000	367,000	520,000	607,000
Bombay	32,000	81,000	61,000	68,000	102,000	123,000
Sind	11,000	10,000	9,000	11,000	20,000	18,000
Bengal	45,000	52,000	65,000	43,000	45,000	48,000
Punjab	1,126,000	735,000	678,000	1,250,000	464,000	856,000
Central Provinces and Berar	214,000	250,000	180,000	247,000	238,000	(f)
Burma	7,000	(e)	(e)	(e)	(e)	(e)
Assam	(e)	(e)	..	..	..	..
North-West Frontier Province	(e)	29,000	36,000	33,000	16,000	28,000
Ajmer-Merwara	(e)	(e)	(e)	(e)	2,000	1,000
Total (e)	3,402,000	3,376,000	1,837,000	3,841,000	3,428,000	3,850,000(h)

(e) Not available

(b) Excludes grain grown with other crops

(c) Taken from Agricultural Statistics

(d) Crop poor owing to unfavourable season

(e) Incomplete

(f) Not yet reported

(g) Excludes Madras and Central Provinces and Berar

(h) Excludes Central Provinces and Berar

Note.—No forecast is prepared for the crops dealt with in this table. The figures are taken from the provincial Season and Crop Reports or specially obtained from local authorities.

No. 16.—NORMAL AND ACTUAL RAINFALL (IN INCHES) IN EACH PROVINCE AND METEOROLOGICAL SUBDIVISION IN INDIA.

Provinces and Subdivisions	Normal rainfall	ACTUAL RAINFALL										Variation of 1916 rainfall from normal	Percent- age variation from normal
		1907	1908	1909	1910	1911	1912	1913	1914	1915	1916		
United Provinces—	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Inches	Per cent
United Provinces, East	30.2	25.72	29.86	42.02	11.49	41.96	33.46	30.39	38.02	53.7	47.2	+ 8.0	+ 20
United Provinces, West	37.9	25.77	37.98	42.23	42.62	38.13	34.86	23.30	39.89	37.4	47.7	+ 9.8	+ 26
Madras—													
Malabar . . .	127.6	156.60	131.21	138.00	121.78	114.42	151.14	111.61	134.01	119.0	131.2	+ 3.6	+ 3
Madras, South-East	35.0	47.38	30.61	36.15	36.35	32.21	34.31	35.69	37.93	38.8	31.0	- 1.0	- 3
Madras, Deccan . .	24.4	19.51	20.33	26.81	33.55	18.66	25.87	20.52	21.92	31.7	30.1	+ 15.7	+ 64
Madras Coast, North	39.5	35.64	36.35	38.28	19.63	36.25	40.11	36.91	43.02	61.6	52.7	+ 13.2	+ 33
Bombay—													
Gujarat . . .	32.6	33.75	35.00	31.86	35.82	13.73	41.89	41.30	39.73	16.7	32.6	0	0
Konkan . . .	109.2	112.10	109.13	111.40	99.82	81.50	110.90	103.99	137.20	93.0	128.6	+ 10.4	+ 18
Bombay, Deccan . .	30.8	31.07	26.78	28.65	34.87	21.27	31.37	28.02	39.38	34.5	40.9	+ 10.1	+ 33
Sind . . .	6.5	7.90	12.18	6.28	9.00	1.03	5.12	18.70	6.10	1.8	11.1	+ 4.6	+ 71
Bihar and Orissa—													
Orissa . . .	56.8	58.02	57.54	59.70	59.28	49.65	54.07	61.23	61.80	61.9	57.7	+ 0.9	+ 2
Chota Nagpur . .	51.9	56.60	47.69	55.07	47.88	54.53	41.51	63.24	43.11	39.3	50.1	- 1.8	- 3
Bihar . . .	48.6	42.77	27.63	53.67	53.09	58.91	43.41	60.13	44.30	49.5	58.7	+ 10.1	+ 21
Bengal—													
Eastern . . .	74.8	75.19	66.31	90.66	91.76	100.85	79.76	88.96	69.39	80.7	88.3	+ 19.5	+ 18
Western . . .	74.8	52.07	52.69	69.96	59.07	55.11	79.76	88.96	69.39	80.7	88.3	+ 19.5	+ 18
Central Provinces and Berar—													
Berar . . .	32.2	30.32	35.07	31.23	40.59	23.78	25.93	33.93	40.75	36.5	47.2	- 15.0	+ 47
Central Provinces, West	45.4	38.60	46.59	30.91	47.59	40.42	40.99	39.98	44.15	50.1	57.5	+ 12.1	+ 27
Central Provinces, East	52.1	48.90	59.93	50.39	56.46	55.11	54.80	47.72	54.55	55.2	51.1	+ 2.0	+ 44
Punjab—													
East and North . .	23.1	21.38	32.41	31.85	26.37	21.03	22.30	22.71	31.89	18.3	26.8	+ 3.7	+ 16
South-West . .	9.2	9.62	17.88	11.51	9.27	9.25	8.61	12.59	18.67	4.0	12.3	+ 3.1	+ 34
Burma—													
Lower Burma . .	129.2	137.68	127.55	132.58	117.81	128.81	120.88	122.48	140.92	135.1	125.6	- 3.7	- 3
Upper Burma . .	45.2	38.80	44.08	47.21	48.49	49.30	48.67	43.47	49.54	45.7	49.9	+ 4.7	+ 10
Assam . . .	98.8	96.81	89.01	89.26	105.20	117.14	101.28	105.89	87.03	112.3	96.6	- 2.2	- 2
North-West Frontier Province	16.9	18.51	27.61	18.65	22.95	20.00	15.78	11.66	30.30	15.0	20.3	+ 3.4	+ 20
Central India—													
Central India, West	33.6	26.41	32.64	34.08	37.85	25.80	32.71	30.22	32.91	27.0	46.9	+ 13.3	+ 40
Central India, East	38.7	33.97	51.08	39.74	11.41	44.84	37.83	31.16	40.77	38.7	48.3	+ 9.6	+ 25
Rajputana—													
Rajputana, West . .	13.1	15.27	26.32	18.20	12.35	5.84	12.53	10.10	12.51	6.9	17.2	+ 4.3	+ 32
Rajputana, East . .	25.2	21.31	36.75	29.12	28.72	18.20	27.80	15.65	26.36	17.1	33.6	+ 8.4	+ 13
Hyderabad—													
Hyderabad, North . .	34.9	27.83	32.87	30.02	43.24	24.91	23.39	27.10	42.70	40.8	41.4	+ 9.5	+ 27
Hyderabad, South . .	30.6	27.39	31.15	28.02	31.35	21.11	25.05	19.76	38.71	40.2	50.9	+ 20.3	+ 66
Mysoore . . .	36.1	36.23	27.48	41.14	43.85	33.91	41.02	32.40	33.68	37.7	48.6	+ 10.5	+ 28

APPENDIX I

METHOD OF FRAMING ESTIMATES OF CROPS

There are three factors necessary for framing an estimate of outturn, namely, the area, the standard normal outturn per acre, and the fraction representing the relation of the crop reported on to the normal crop per acre.

As regards area, there exists in the villages of most provinces an agency capable of reporting the acreage of crops with great accuracy, wherever the fields have been mapped and surveyed. The tracts, for which statistics are ordinarily not obtainable, are yearly diminishing in extent; but owing to the absence of maps or the non-existence of trained village establishments they still represent a considerable aggregate area. These tracts consist chiefly of permanently settled estates, lands held on privileged tenure, and unsurveyed areas. For these tracts the acreage as well as the outturn cannot be more than a rough estimate. Such estimates of areas, once framed, are liable to become stereotyped and repeated year after year without regard to the influence of exceptional seasons or changes in the economic condition of the tracts. In order to prevent this, provision has been made for the annual revision of these area estimates by careful comparison with the conditions prevailing in those adjoining areas of a similar character for which accurate information is available, and by means of such special enquiries as may be possible.

In dealing with the calculation of the areas under crops, two other matters demand consideration, namely, (1) whether the area returned should be the area sown or that successfully cropped, and (2) whether, when the forecast crop is sown mixed with other crops, it is preferable that the total area covered by the mixed crops should be exhibited, or that such area only should be shown as is estimated to represent the acreage covered by the forecast crop only. As regards (1), the general rule is that the returns should exhibit the areas actually sown, whether the crop comes to maturity or not, the principle underlying this rule being that the failure of crop should affect not its area, but its outturn. An exception to this rule is, however, made when fields, owing to the failure of the first sowings, have been devoted to other crops. In this case the area first sown with the forecast crop may be omitted. As to (2), the areas covered by the several crops in a mixed field are estimated in various ways in the different provinces, and the estimates are based on formulae prescribed by the provincial authorities in individual cases, as it has not been found practicable to prescribe one uniform method of calculation. For purposes of the forecasts the area to be returned must be the area covered by the forecast crop, exclusive of the area covered by the other crops with which it is mixed.

Next with regard to the standard normal outturn. A normal crop may be defined as "that crop which past experience has shown to be the most generally recurring crop in a series of years; the typical crop of the local area; the crop which the cultivator has a right (as it were) to expect, and with which he is (or should be) content, while if he gets more he has reason to rejoice, and if less he has reason to complain;" or in other words, it is the "figure which in existing circumstances might be expected to be attained in the year if the rainfall and seasons were of a character ordinary for the tract under consideration, that is, neither very favourable nor the reverse." Briefly, it is stated to be "the average yield on average soil in a year of average character." This normal or average yield will not necessarily correspond with the average of a series of years' figures, which is an arithmetical average. The Agricultural Department in each province maintains a statement of the normal or average yield per acre of land of average quality (under the two major heads of irrigated and unirrigated land) for the several crops in each district. In order to test the accuracy of these standards of normal or average yield and to revise them, if necessary, a system of crop-cutting experiments is in force in all the provinces. Under this system plots of land of average quality are selected and the crops growing on them are cut and weighed in the presence of responsible officers of the District staff or of the Provincial Agricultural Department. These experiments have to be carried out every year in respect of all the principal crops, and in accordance with rules specially framed by the several provincial authorities. The results of the experiments are reported to the head of the provincial Agricultural Department, who on a careful scrutiny of all the reports received by him, and after such further investigations as he may deem necessary, revises or verifies the standards previously adopted for the districts or the province. This revision is ordinarily made once in five years.

The third factor—the fraction representing the relation of the crop reported on to the normal crop per acre—is what is known as the "anna estimate" or the "percentage estimate." In many parts of India the cultivators estimate the crop outturn in annas or sixteenths, as there are sixteen annas in a rupee. They take a certain number of annas to represent the normal outturn, and estimate the outturn of the year of report as so many annas higher or lower than that normal. But in some tracts sixteen annas express a bumper crop, while in others the same term expresses a normal crop, and the number of annas taken to represent a normal outturn varies between 12 and 16. Consequently the anna estimate of one tract is not always amenable to comparison or combination with that of another tract. The percentage estimate is the American system under which 100 is taken to denote a normal crop and the estimated outturn of the year of report is stated as a percentage of that crop. In 1897 a question arose as to whether the anna notation or the American notation should be used in making crop estimates, and it was strongly urged upon the Government of India that as the cultivators and

village officers entrusted with the duty of collecting data for crop reports were mostly accustomed to the Indian system, *i.e.*, the anna notation, the adoption of any other system would tend to confuse the estimate. Local Governments and Administrations were, therefore, permitted to adopt such scale of notation as might be suited to local conditions, the object being to secure that the returns should be in terms of a normal crop. But since the anna standard thus adopted would not possess any fixed or uniform value, it was laid down that in published forecasts the anna notation should not be used, the American notation being used in its stead, *i.e.*, 100 being taken to represent a normal crop and the estimated outturn being stated as a percentage of that crop, and the conversion of the anna estimate into the percentage estimate being made either by the district officer or by the provincial authorities.

When these three factors have been determined, they are multiplied into each other to arrive at the required quantitative estimate of outturn. Thus, if the area be 60,000 acres, the standard of normal outturn 500 lbs per acre, and the percentage estimate 80, the required quantitative estimate would be $60,000 \times 500 \times \frac{80}{100} = 24,000,000$ lbs.

The question of improving the method of framing estimates of outturn is now under the consideration of the Government of India.

APPENDIX II

METHODS OF COLLECTING THE STATISTICS PROVINCE BY PROVINCE

The estimates prepared by the United Provinces include all the districts of the province, *United Provinces*, except Almora and Garhwal, for which the required particulars are not available as no regular village papers are kept up by *patwaris* (village accountants) in these two districts. The area is taken from the crop statements based on field-to-field inspections, which are compiled by *patwaris* and checked by higher revenue officers. The estimates of the standard yield are based on the results ascertained from crop-cutting experiments conducted annually in selected districts. The standards, which are separate for irrigated and unirrigated crops, are revised every five years on a consideration of the results of crop-cutting experiments, and are applied to the condition of the crops reported by district officers and selected land-holders whose number exceeds six hundred.

(Total cultivated area
36,241,000 acres.)

In the Madras Presidency, the estimates relate to all districts in which the respective *Madras* crops are grown. Approximately two-thirds of the cultivated land in the Presidency is *Government* or *raiayatwari* land, and has been carefully surveyed. All the village officers therein are appointed and controlled by Government officials. In the ordinary course of his work the village accountant sends every month to the Revenue Inspector (the officer in charge of a group of villages varying in number) a detailed statement of the sowings in his village. For those crops for which forecasts are prepared, the Revenue Inspector, who is himself a touring officer, reports to his *Tahsildar*, the area in his range under that crop, with his estimates of the average yield expressed in so many annas of the normal crop, when outturns are required. The *Tahsildar* consolidates all these figures and reports the total direct to the Director of Agriculture with, in the case of outturn, his estimated yield (also expressed in annas of the normal). The remaining third of the Presidency is *zamindari* (consisting of large proprietary estates), of which only a part has been accurately surveyed, and for which somewhat similar returns are prepared and dealt with accordingly. In other cases the *Tahsildar* or Deputy *Tahsildar* estimates the area and yield as well as he can from his own knowledge, and from reports of the estate officials. The figures for these *zamindari* areas are included but shown separately in the reports sent by the *Tahsildars* to the Provincial Director of Agriculture. The Native States of Pudukkottai and Bangalore send similar reports direct to the Director for cotton only. No other Native State in the Presidency prepares any crop forecast. Thus for each forecast return 232 separate reports are received in the Director's office, where they are scrutinized and tabulated. More accurate figures of areas cultivated are obtainable at the end of the year after all the village accounts have been checked. These figures are published later in the provincial Season and Crop Report. The figures reported by *Tahsildars* in their final forecasts—particularly those from *zamindari* areas—are checked by a comparison with the forecast reports and the Season and Crop reports of previous years and the returns from neighbouring Government areas, and thus an attempt is made to rectify obviously inaccurate reporting. Standard rates of outturn have been determined for each crop on a consideration of the latest crop-cutting experiments and of the results on the Government farms. The Director checks the rate of yield reported by *Tahsildars* by estimates received from his subordinate officers and from non-officials interested in a particular crop.

(Total cultivated area
34,411,000 acres.)

The estimates for the Bombay Presidency include all British districts and Native States where the respective crops are grown to any extent. In the British districts of the Presidency proper the area under different crops is ascertained in the first instance by village officers and recorded in village returns, which are checked by circle inspectors and other revenue officers, and compiled by the former for their circles and then for the *taluka*. The *taluka* figures are totalled up for each district in the office of the Director of Agriculture of the province. For Sind this work is done by local officers, and the Director receives district-by-district figures. The information received is for villages for which regular statistics are available, the proportion of reporting area being 91.4 per cent in the Presidency proper and 99.6 per cent in Sind. From 1909-10, however, estimates for the non-reporting areas have been made so far as possible and included in the table. In the case of Native States the acreage is estimated on the best local data available. The approximate numerical strength of the reporting agency is 188 in the Presidency proper, 60 in Sind, and 33 in the Native States. No standard of yield has yet been fixed. Local estimates of crop condition are converted to quantitative figures on the basis of a formula showing the average yield of crops, which has been adopted provisionally. This formula is now being revised, the revision being based on the ascertainment of actual yield in different parts of the Presidency by careful local enquiry by officers of the provincial Agricultural Department, who are tabulating the results and comparing them for the purpose. The unit of area in the formula is the district, and dry and irrigated crops are separately dealt with. Each year's estimate of the condition of crops is prepared by the *manzillars* (or *mahalkaris* where the *taluka* is sub-divided) from notes which they make and from reports from village accountants and circle inspectors. The estimate is sent direct to the Director of Agriculture, who, in the light of the general prospects of the season, makes the quantitative calculations. For Sind there are no formulae, and all the necessary information is obtained from the district officers in the form of estimates on the basis of twelve

Bombay and Sind
(Total cultivated area
30,077,000 acres.)

Note.—The cultivated area shown in the margin represents the average net area actually sown with all crops in each province during the three years ending 1915-16.

annas for a normal crop, together with quantitative equivalents gathered from general experience. For the Native States condition estimates are obtained, and the formulae for adjoining British districts are applied.

Bihar and Orissa.
(Total cultivated area
25,974,000 acres.)

The estimates for Bihar and Orissa relate to all the districts of the province where the respective crops are grown. Survey and settlement operations have been completed in all the districts except three, and in these districts the settlement figures serve as a check on the estimates of acreage based on the information furnished by the police. In the absence of any revenue agency in the province, the figures are based mainly on rough approximate estimates made by district officers, and are more or less conjectural. The district officers obtain information from the sub-divisional officers through the agency of the police. In the district of Sambalpur, the acreages under crops are revised annually by the Land Records staff by field-to-field inspection. The system of making crop-cutting tests, as in other provinces, over a series of areas and seasons for the ascertainment of standards of yield has been in force in the districts of this province for some twenty-three years, but sufficiently trustworthy figures of yield have not yet been obtained from these tests to enable Government to accept them as standards. The estimates, therefore, of yield given in the forecasts are based on standards adopted provisionally by the provincial Department of Agriculture on the basis of information obtained from other sources.

Bengal.
(Total cultivated
area 24,644,000
acres.)

The estimates for Bengal relate to all the districts of the Presidency where the respective crops are grown. In the absence of any revenue agency in the province, the figures are based mainly on rough approximate estimates made by district officers, and are more or less conjectural. The district officers obtain information from the sub-divisional officers through the agency of the police. The system of making crop-cutting experiments, as in other provinces, over a series of areas and seasons for the ascertainment of standards of yield has been in force in Bengal for the last twenty-two years, but sufficiently trustworthy figures of yield for all the crops have not yet been obtained. The quantitative estimates, therefore, of yield given in the forecasts are based on standards provisionally adopted. In the case of rice, jute, and sugarcane the standard rates of yield are those arrived at from crop-cutting experiments.

Central Provinces
and Berar.
(Total cultivated
area 25,004,000
acres.)

The estimates for the Central Provinces and Berar relate to all the British districts of the province in which the respective crops reported on are grown. As regards the Native States of the province, reports on wheat only are furnished by the two States of Khairagarh and Nandgaon. No information is available for any other State. The figures of acreage for cotton, sesamum, rice, and sugarcane are estimates based on reports furnished by the local officials of the Land Records staff. The figures for wheat and linseed represent the actual areas sown with these crops as disclosed by field-to-field inspection by *patwaris*. The reporting agency consists of 235 revenue inspectors with, on an average, 22 *patwaris* working under each inspector. Each *tahsil* has usually 4 revenue inspectors. Standards of outturn were framed for each crop from the results of crop-cutting experiments on selected fields under the supervision of responsible and selected officials during the years 1881-85 to 1887-88. These standards have been revised from time to time on the basis of the results of crop-cutting experiments since made, the last revision having been made in 1912. The yield expressed by the people in terms of annas in the rupee is converted into percentages, 13-3 annas, or a normal crop, being taken to be equal to 100. A full crop or 16 annas is denoted by 120, and a bumper crop or 20 annas by 150. All deductions based on the standards are made by the provincial Director of Land Records and Settlements from the year's figures furnished by the district officers, who are supposed to bear in mind the standards when estimating the yield of the season.

Punjab.
(Total cultivated
area 24,396,000
acres.)

The estimates for the Punjab relate to all the British districts in which the respective crops are grown. As regards the Native States of the province, reports on wheat and cotton are furnished by all the States in which the two crops are grown to any considerable extent. No estimates for any other crop are prepared by any Native State. The figures of area for all the British districts up to 1912-13 were based on actual measurements by the village revenue staff. Estimates of yield were recorded by district officers after personal enquiry from *tahsildars* and leading agriculturists. The total number of agriculturists consulted by the district officers and *tahsildars* must amount to several thousands. From 1913-14, however, this method is followed only in districts in which the respective crops are grown to a considerable extent. For other districts the provincial Director of Land Records prepares conventional forecasts based on the actual average area figures for the previous five years, and an assumed average outturn as determined by him to meet the character of the harvest.

Burma.
(Total cultivated
area 14,283,000
acres.)

The estimates for Burma relate to all the districts of the province in which the respective crops reported on are grown. The figures for the districts in which the crops are grown to a considerable extent are based on regular reports, furnished by district officers, while those for the remaining districts are based on rough estimates prepared by the Commissioner of Settlements and Land Records. For the districts from which regular reports are received, the figures of area are obtained from the assessment rolls prepared by revenue surveyors. The original information about the yield is obtained from township officers, inspectors of Land Records, and from the more important of the Land Revenue subordinate officers. In this way the estimate of each district is based on the information furnished by some thirty or more persons. The figures of both area and yield are tabulated by the Superintendent of Land Records and

checked by the District Officer. The Commissioner of Settlements and Land Records compares the estimated yield with a standard representing the normal yield, which was fixed after an extensive series of experimental crop-cuttings by settlement officers.

The estimates for Assam relate to all the districts in which the respective crops reported on are grown to any extent, excluding some of the unimportant hill districts in certain cases. The information is received from district officers, who in their turn obtain figures from the district Land Records staffs in the case of the temporarily-settled areas and from zamindars in the case of the permanently-settled portion of Goalpara. In the permanently settled part of Sylhet the figures for jute are those submitted after actual inspection by the village *choukidar panchayats*, and for tea those reported by the garden managers, while for all other crops estimates have been framed by the district officer from the actual areas in the temporarily settled parts applied, on the basis of population, to the rest of the district. The figures are checked only in the temporarily settled tracts by the circle Sub-Deputy Collectors; in the permanently settled districts of Sylhet and Goalpara there is no valid check at all. The estimates of outturn are based on the normal yield obtained from the results of crop-cutting experiments.

The estimates for the North-West Frontier Province relate to all the districts of the province in which the respective crops reported on are grown, including the Tochi agency in the case of wheat, cotton, and sugarcane, and the Kurram agency in the case of wheat and cotton. The figures of area are based on actual measurements made by the *patwaris* in their field-to-field inspection at each harvest. They are further checked by higher revenue officers. The estimates of the standard yield are based principally on data derived from a large number of crop-cutting experiments made during the progress of settlement operations. They were framed for each assessment circle, which is the unit of area, and separately for lands irrigated by canals, by wells, for alluvial (*sailab*) lands, and for lands entirely dependent on rain. The standards are applied to the estimates of condition of crops received from the district officers, who frame their estimates in consultation with local agriculturists. The exact number of agriculturists consulted by the district officers is not available, but it must necessarily be several hundreds.

The estimates for Ajmer-Merwara relate to the whole of the district. So far as *khalsa*,* *ajmer-Merwara*, *jagir*, and minor *istamrari* villages are concerned, the *patwari* is responsible for making field-to-field inspections of every village in his circle at each harvest. These inspections commence on 1st September for the autumn harvest and on 1st February for the spring harvest. The *patwari* notes down the results of his local inquiries and inspections in his field book. A certain percentage of the entries made by the *patwari* is checked and corrected, when necessary, by the *girdawar* or *kanungo*, who also inspects the crops at each harvest. The taluk officers further test a certain number of entries, and the sub-divisional officer also makes a general inspection of crops at each harvest. As soon as the inspection of the harvest is complete an abstract statement of area and outturn is compiled separately for each *girdawar's* circle and taluk, and these statements are then consolidated for the three sub-divisions in the district office. An assumed normal outturn per acre for each crop has been fixed at settlement. Crop estimates are annually made by the revenue officers and the results recorded. These sets of figures give a useful check on the outturn estimates made by the *patwaris*. The exact area sown in the sub-divisions is obtained from the abstract statements. In the large *istamrari* estates the preparation of the field books is done by the estate officials. These field books contain fairly accurate information in regard to wheat, the outturn of which in maunds is generally appraised for the purpose of payment of the cultivators' rent; but as regards cotton and sesamum the figures are conjectural, as no crop-cutting experiments are made, the rents being charged in cash. The Government agency does not supervise the collection of figures in large *istamrari* estates.

The estimates for rice furnished by Coorg are based on the results of annual crop inspections and experiments. Crop inspections are made by each *shankoy* for his circle under the supervision of the *parpattigar* and the detailed particulars entered in the crop inspection registers and summarised in the crop abstracts, the totals of which are compiled in the office of the Deputy Director, Land Records and Agriculture. About 50 crop experiments are conducted annually by subordinates of the Revenue Department and *subcdars* (*taksildars*) and also a few by the Deputy Director of Land Records and Agriculture, in whose office the estimates of yield, given in the forecast, are calculated on the basis of the average for the province.

In the Central India States estimates are framed for wheat and cotton. The methods Central India differ with different States. In most States the acreage returns are prepared by *tuhsils* from the field measurements of the *patwaris* and then compiled for the whole State. In some cases the outturn estimates are similarly compiled after check on the spot by the higher revenue officials in consultation with the cultivators; in others they are merely an approximation from the acreage figures; in a few States fields are selected in the different circles as bearing an average yield, the crop is cut and weighed, the outturn for the circle is calculated from the result, and the totals of the circles form the return for the State. Finally, each Political Agent compiles the returns of the States in his political charge into an Agency return, each of which is shown separately in the return for Central India.

* *Khalsa* villages are those which pay full revenue to Government.

Rajputana.

The estimates for wheat and cotton furnished by the States in Rajputana are generally defective in consequence of the absence of figures for unsurveyed areas and privileged tenures in many cases.

Hyderabad.

The estimates for wheat, cotton, and oilseeds furnished by the Hyderabad State excluded until 1902-03 *jagir* and other revenue-free lands or privileged tenures; since then estimates for these areas have been procured as far as possible and included in the statement.

Mysore.
(Total
area
acres.)

The estimates furnished by the Mysore State relate to all the districts of the State cultivated in which the respective crops are grown. As regards area the information is based on the entries made by the *shanbag* (village accountant) in his crop inspection book and checked by the higher revenue officers. The outturn is noted by the *shanbag* in terms of annas (16 annas being taken for a normal or 100 per cent crop) from which the total yield is determined by reference to the standard normal outturn per acre fixed for each taluk. The figures are finally scrutinized and consolidated in the Revenue Commissioner's office.

APPENDIX III

**DATES PRESCRIBED FOR THE ISSUE OF THE ALL-INDIA FORECASTS OF
CROPS BY THE DEPARTMENT OF STATISTICS, INDIA**

RICE—

1st forecast	.	.	.	.	.	.	.	.	.	.	.	October	20
2nd	"	.	.	.	.	.	.	.	.	.	.	December	20
Final	"	.	.	.	.	.	.	.	.	.	.	February	20

WHEAT—

COTTON—

LINSEED, RAPE AND MUSTARD—

SESAMUM (*til* or *jinjili*)—

GROUNDNUT—

INDIGO—

SUGARCANE—

INDEX.

	Pages.		Pages.
American notation	21, 22	Methods of collecting statistics	23-26
Anna estimate	ib.	Mixed crop, treatment of	21
Area—		Mustard (see Rape and Mustard)	
Bajra (<i>Pennisetum typhoideum</i>)	~ 18	Normal crop, definition of	21
Barley (<i>Hordeum vulgare</i>)	17	Normal rainfall	20
Cotton (<i>Gossypium sp.</i>)	3, 6, 12	Normal yield per acre	8
Gram (<i>Cicer arietinum</i>)	19	Notation for making crop estimates	21, 22
Groundnut (<i>Arachis hypogaea</i>)	4, 6, 16	Percentage estimate	ib.
Indigo (<i>Indigofera Tinctoria</i> and <i>I. arrecta</i>)	ib.	Rainfall, normal and actual	20
Jawar (<i>Sorghum vulgare</i>)	17	Rape and Mustard—	
Jute (<i>Cotinusus sp.</i>)	3, 6, 13	Area	4, 6, 14
Linseed (<i>Linum usitatissimum</i>)	ib.	Yield	4, 6-8, 14
Maize (<i>Zea mays</i>)	18	Rice—	
Rape and Mustard (<i>Brassica sp.</i>)	4, 6, 14	Area	2, 6, 9
Rice (<i>Oryza sativa</i>)	2, 6, 9	Yield	2, 6-8, 9
Sesame (<i>Sesamum indicum</i>)	4, 6, 15	Season, leading features of	1-4
Sugarcane (<i>Saccharum officinarum</i>)	2, 6, 11	Sesame—	
Tea (<i>Camellia thea</i>)	ib.	Area	4, 6, 15
Wheat (<i>Triticum sativum</i>)	2, 6, 10	Yield	4, 6-8, 15
Area of crop, how ascertained	21, 23-26	Source and scope of the estimates	1
Bajra—		Standard normal output	21
Area	18	Sugarcane—	
Yield	ib.	Area	2, 6, 11
Barley—		Yield	2, 6-8, 11
Area	17	Tea—	
Yield	ib.	Area	2, 6, 11
Charts illustrating the growth of production of crops	frontispiece	Yield	2, 6, 7, 11
Cotton—		Wheat—	
Area	3, 6, 12	Area	2, 6, 10
Consumption	3, 12	Yield	2, 6-8, 10
Not exports	ib.	Yield—	
Yield	3, 6, 8, 12	Bajra	~ 18
Crop-cutting experiments	21	Barley	17
Dates of publication of forecasts	27	Cotton	3, 6-8, 12
Development of the estimates	1	Gram	19
Gram—		Groundnut	4, 6-8, 16
Area	19	Indigo	4, 6, 8, 16
Yield	ib.	Jawar	17
Groundnut—		Jute	3, 6, 8, 13
Area	4, 6, 10	Linseed	3, 6-8, 16
Yield	4, 6-8, 16	Maize	18
Indian Notation	21, 22	Rape and mustard	4, 6-8, 14
Indigo—		Rice	2, 6-8, 9
Area	4, 6, 16	Sesame	4, 6-8, 15
Yield	4, 6, 8, 16	Sugarcane	2, 6-8, 11
Jawar—		Tea	2, 6, 7, 11
Area	17	Wheat	2, 6-8, 10
Yield	ib.	Yield per acre—	
Jute—		Cotton	8
Area	3, 6, 13	Groundnut	7
Consumption and Exports	3, 13	Indigo	8
Yield	3, 6, 8, 13	Jute	8
Linseed—		Linseed	7
Area	3, 6, 13	Normal	8
Yield	3, 6-8, 13	Rape and Mustard	7
Maize—		Rice	ib.
Area	18	Sesame	ib.
Yield	ib.	Sugarcane	ib.
Method of framing estimates of crops	21, 22	Tea	ib.
		Wheat	ib.

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